

Aviation News

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New Experimental Army Glider: *This unusual flight view shows the CG-16, a glider of experimental design having a large payload but limited cargo space. It resulted as part of the study which has been made to determine the limit in size for tactical usefulness of gliders and until now has been on the restricted list.*

Technical Rules Accord Looms as First Fruit of Parley

Political and economic fencing centers around Anglo-Canadian plan for international authority and U. S. bilateral agreement proposal....Page 7

Magnitude of Scrap Problem Reveals Need for Plan

Seven areas already set up by Army for distribution of scrap and excess aluminum alone and four more are to be activated.....Page 16

Federal Works Agency Takes Hand in Port Planning

White House, Budget Bureau and Army and Navy also expected to play important roles in development of fields throughout country....Page 27

Standard & Poor's Sees "Big 4" Dominating Airlines

Smaller units, such as PCA, National, Northwest and Northeast also are "destined for an expanded role," investment advisory group says.....Page 51

Navy Expected to Extend Use of Incentive Contracts

Only four for aircraft have been completed but saving of \$208,000,000 and \$37,000,000 extra profits by companies make wider use likely.....Page 47

Liberalize Schedule, Non-Schedule Flying Insurance

Full coverage allowed for first time without payment of extra premium under new provision put into effect by Conn. General.....Page 10

Micarta antenna masts to
"HIT THE BREEZE"
 at 600 mph!



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NOSE RACKS have been successfully loaded with Micarta... furnish best example of Micarta's strength and the skill of Westinghouse engineers in intricate molding arrangements.

THE AVIATION NEWS

Washington Observer

TOKYO JITTERS—Even reconnaissance flights have their effect on Japan. Not only is there but in factories at a time when high capacity output is held vital because of recent losses, but defense logically must be shifted after every invasion flight, and inevitably the panic potential will go up.

NAMING A TROPHY—The worldwide Collier Trophy will emerge at its next presentation in full nomenclature as the Robert F. Collier trophy, authoritative sources report. Originally designed by the donor, Robert F. Collier, as the Aero Club trophy, the massive award has been presented annually to the individual or organization making the foremost contribution to aviation in the preceding year. Since NAA took over many of the Aero Club functions years ago, the trophy has been called merely the Collier trophy. Using the donor's full name has been advocated by "elder statesmen" of aviation who have felt that Mr. Collier's contribution to advancement of aeronautics as an individual is not being sufficiently recognized.

NO COST CONTRACT SETTLEMENT—It appears now that the no-cost contract settlement question has been settled by a ruling of the Bureau of Internal Revenue, which has agreed that if a new contractor holding a fixed-price contract wishes to waive claim for compensation when his contract is terminated he may deduct his loss from his income or excess profits tax. The National Association of Manufacturers, which went into this problem, presented the customers when it said that just

what this will mean to industry was a matter of considerable speculation, but that it couldn't hurt and that it might help to some extent.

CONTRACT TERMINATION—Confusion voiced in some aircraft manufacturing circles that the industry's viewpoint on termination procedures—that is, favoring negotiation rather than litigation—has had some repercussions on official Washington circles with emphasis by the AAF Technical Service Command that more than 3,000 "carefully selected officers" are being trained to handle the complicated details of contract termination quickly and fairly. The Air Technical Service Command now has first priority on officers for this job.

INSURANCE RATES—Elimination of extraordinary life insurance rates for airline passengers and lowering of aviation occupational premiums by Connecticut General Life Insurance Co., detailed in this issue of Aviation News, is only the first in a series of insurance revisions to be expected. Aviation has earned recognition, and it will be planning to the industry that a company with long aviation experience has made the first sound steps in program reductions.

EXIT CLAYTON—Firing a voluminous report by Surplus Property Administrator W. L. Clayton last week preaged early appointment of the new Surplus Property Board. Clayton has been staying on until after election when President Roosevelt could name a board with-

Martin PBM Mariner in jet assisted take-off at Pacific base





"COMING EVENTS CAST THEIR SHADOWS..."

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Accord on Technical Rules Looms As First Fruit of Chicago Parley

Political and economic fencing centers around Anglo-Canadian plan for all-powerful international authority and U. S. proposal for bilateral agreements, confining scope of world control body to technical field.

By MERLE NICKEL

Behind the bickering over world air policy that underlies the International Civil Aviation Conference in Chicago last week, there existed a strong likelihood that the meeting at least would reach a first multilateral agreement on technical regulation—a fundamental proposition whose adoption would mean attainment of an important initial step.

But rules for international flying have little purpose unless such flying is to be done, and the technical aspects of the conference was only one level. Another, as the meeting shook down into debate areas, was the political and economic factors, and here the question was between British and Canadian plans for an international authority with jurisdiction over routes and frequencies, and the United States proposal that such matters be arranged through ordinary bilateral agreements, confining to the technical field whatever power the international body might wield.

Diplomatic Fencing—As the diplomatic game and loe revolved over the international authority question, the conference was that the expected technical agreement, even if only the actual formation of a minimum body of rules, would be in itself a positive result of the conference if nothing more emerged. Here it was significant that the U. S. technical proposals were the ones considered, although others were submitted. Presentation of some of the proposals offered an educational problem, many of the conference delegates being non-technicians or unfamiliar through lack of experience with aviation's technological developments.

Technical annexes submitted by

American experts covered such subjects as airway facilities, rules of the air, air traffic control, airworthiness requirements, registration and identification of aircraft, aeronautical charts, log book requirements, customs procedure, meteorological considerations, and

Jockeying—Despite the endless detail that faced technical committees in the discussion of these matters, a tougher task was at hand for other departments of the conference in the issue of the international air governing body. It appeared early in this phase of the work that if the divergent views of the U. S., the British, the Canadians, and later the Latin American bloc were to be reconciled, some one would have to yield. There were signs of jockeying, but only within two clearly delineated schools of thought.

One is the American view, whose supporters held it would mean the building up of international aviation without restriction. Opponents feared it would lead, through uniformed and inexperienced pilots, to waste, subsidies and failure to serve the public interest.

The other view, on which the British claimed as major difference with the Canadians, was that division of air commerce must begin under the same conditions eventually to be imposed by an international authority and grow within that jurisdiction. Opponents of this plan labeled it restrictive.

Latin American Attitude—The Latin American group, mired in complete air sovereignty for all nations and a "one country, one vote" stand on any international authority, drew back slightly from both these positions, but likely will

Air Sovereignty

An underlying concern lay on the viewpoint from which conferring nations at the Chicago conference considered air sovereignty. Large nations have "outraging concern" about what other countries they can do in, while many smaller nations are mainly interested in preservation of their right to determine what other countries' airlines shall land at their airports.

Rouge proposals have been made by several nations and others were in issue. Among the earliest were the United States, which was first. The Netherlands, Lebanon, Switzerland and Spain, the last several nations of regions where Spanish routes would go. Poland was expected to announce proposed routes before the week ended, predicting its North Atlantic bid on the five and a half to six million Poles in that country.

prove a major stumbling block to either.

Committee rejection of the New Zealand-Australia plan for an international monopoly to own aircraft and operate proposed international trunk routes led the French to suggest that such a company might be formed to operate a single line as a test arrangement, carrying such cargo and passengers as, as an alternative, mail only. This proposal was out of order at the committee meeting, but a spokesman for the French delegation said it "possibly" would be considered later.

The U. S. position, as set forth early by assistant secretary of state Adolf A. Berle, Jr., chairman of the U. S. delegation and president of the conference, is that an international authority, whatever power could and should be extended to it in the purely technical field, in the economic and political realm "must be primarily controlling, fact-finding and fact-finding" with power to bring together interested parties when friction develops and suggest to



International Civil Aviation Conference: Shown here are the United States, United Kingdom and Canadian delegates to the important Chicago conference. United States—W. A. W. Brown, Assistant Secretary of Commerce; L. Welch Pope, chairman, Civil Aeronautics Board; Rep. Alfred E. Broun, Sen. James Bailey, A. Berle, Jr., Assistant Secretary of State and head of the delegation, Sen. Owen Brewster, Richard P. Warner, CAB vice-chairman, Rep. Charles Walcott and Major F. L. DeLoach. Canadian delegates, left to right, C. D. Ross, Minister of Reconstruction and head of delegation, R. J. Symington, president, Trans-Canada Air Lines, delegates and J. A. Wilson, Director of Air Services, Department of Transport. Missing in Canadian group is delegate R. A. C. Henry, chairman Air Transport Board, United Kingdom delegation, left to right around the table, G. Fitzmaurice, legal adviser, Foreign Office, W. C. G. Cribb, assistant under secretary, Air Ministry, Sir Arthur Street, Permanent Under Secretary, Air Ministry, Lord Swire, Minister of Civil Aviation and chairman of delegation, Sir George London, of Government of New Zealand, J. R. Macgavin, Minister, British Embassy, Washington, A. J. Walsh, Newfoundland. Missing from the picture of the United Kingdom conference delegation is W. P. Bishop, director of civil aviation, Air Ministry.

confirms possible solutions to air problems.

The British stand for an international body with comprehensive control over frequency, designation of routes and determination of each country's share in those routes was outlined in the White Paper made public before the conference. Originally this encompassed the setting of rates, but the British now are not so sure this could be accomplished at the outset.

Decision Plan—Canada proposes wide discretion to an international executive board and in-

dividual boards, broader than that under the British plan, although the opinion here was that rules would be brought forth to tighten that discretion. The Canadians also proposed an "escalator clause" to permit a nation whose companies operated with a payload of more than 85 per cent to increase those services. An earlier proviso to not service that falls below a 40 per cent payload was reported on the way to the disband as the second week of the conference wore on. Nor was "payload" easily defined. Some observers expected Canada's proposals to emerge as

the British Empire plan, as the conference progressed.

While the clacking went on over the broad future international picture, the issue of interim mail and provisional routes pending completion of a permanent multilateral agreement was another problem. Bilateral agreements to serve this purpose were under discussion among the delegations.

Favored by Americans—The U. S. wants such agreements to become permanent under a standard form so that international air transport may continue to be carried on within that framework.

The Canadians say they are not in Chicago to discuss bilateral agreements, that the decision should first be made on multilateral, air, into which bilateral arrangements might emerge later. The British view is virtually the same.

Berle told a committee discussing this problem that "plainly we could stop ourselves by the ancient method of not being able to decide whether the egg preceded the hen, or vice versa. If we could not discuss geography until we had discussed international law and air conventions and were at the same time unable to make our minds up about air conventions until we do something about geography."

In general, the American long range view, which apparently may smaller countries share, is that ordinary commercial influences will be sufficient between nations of good will to permit a reasonable basis of development. One thing is virtually certain: The U. S. could be helped by maintaining its status. If others joined in that, as many of the 52 nations at the conference appeared to be doing and a multilateral convention was to be effected on this country's terms, the diplomatic victory would be complete. If not, there was little doubt that bilateral or even quadrilateral agreements would be reached between this nation and others that would pave the way for expansion of U. S. air commerce.

Flying Wing Glider Post-War Prospect

Experimental Hawley Bowles project pictures an aircraft expected to be used in this war but development of craft is believed likely for postwar commercial operations.

Hopes for a glider that will have practical post-war possibilities have risen with disclosure of pictures and some details of the sleek and reportedly efficient two-man "flying wing design" glider pictured on the cover of this week's issue.

It is an experimental glider that will not be used in this war, but which the Army has interested, among others, for post-war and future use. It was first described, within restrictions, in *Aviation News* last February 23. Approaches the revolutionary in glider design, and is the product of Hawley

Conference Highlights

• The International Civil Aviation Conference at Chicago which was all but concluded in its opening days by the week-end of the election campaign has begun to emerge in full and right attitude with preliminary work out of the way. Aside from the main issues there are countless details requiring the attention of the delegates and their staffs which are now at work in earnest.

• The "prototype" of the Chicago conference, seen by some as potentially the biggest thing in United States aviation history since the Wright Brothers flight, was the first international Aeronautical Congress held at Paris in 1909, which appointed a "permanent international aeronautical commission" to study certain legal questions, particularly the use of airports in war. Aviation, as such was not yet in existence and the first airships had succeeded in only a few timid flights.

• Congress last week was that some time must elapse before a clear picture can be obtained of the field of conference accomplishments. Samples of divided opinion on time required was Norway, which expects possibly that issues may be solved speedily. The British think tonight. Hotel rooms for delegates and offices were taken for 25 days from the first of November.

• Personnel of U. S. delegation assigned to technical matters was working diplomatic assignments with considerable detachment, privately pleased at the ease between political and economic aspects and less ardor in personnel with which they are dealing.

ing. The array of technical advisers with which the U. S. delegation journeyed to Chicago reportedly caused the British to say a hurried 400 to London for additional advisers, even to let its own delegation.

• A great air of bustle attended the opening of the second week of the conference. Rooms of the various meetings of committees were devoted mainly to such matters as the supply of flying objects or the speed with which documents were made available. The former was momentarily important because of the great amount of reference material brought by delegates, the second because of the need for study before committee consideration.

• A number of representatives of aircraft manufacturers gathered at the conference hotel, among them Lockheed, United Aircraft, Douglas, Curtiss, Republic, Boeing and Consolidated Vultee. The Aeronautical Chamber of Commerce has a headquarters suite. Announcement by Martin of its Ministry preceded that by another manufacturer of a larger plane built as an army cargo craft but due for eventual commercial use which is expected to be made public this week or next.

• The list of correspondents, photographers, radio men and others with conference press credentials stands close to 100. A detail of military police is stationed at the Polish delegation is thrilled over his room on the 14th floor—fourth of the quarters he ever had occupied. —M. M.

Bowlin, who designed it for Airborne Transport, Inc., affiliate of General Aviation Transportation Corp., manufacturer and lessee of railroad cars.

Interested on Post—The late Richard Dufford was interested in this largest of all gliders and had his life in it when the ballist load shifted and the craft went into a spin. It has two compartments which can accommodate a jeep in each arm or other cargo. Glider experts predict great things for this craft.

Bowlin is rated as one of the nation's foremost designers of sailplanes and is credited with the Bowlin "Pod" single-place craft which won various awards at air

shows. His last ship, involved in an accident, contained a glass ball of the aircraft's body.

Restricted—The CG-16A pictured on the cover has been strictly on the neutral list and there has been no mention of its use or characteristics.

A second glider, on which some details have now been disclosed, has been mentioned but little publicity. It is the CG-16A, a design developed to exploit the flexibility of carrying very large equipment by glider. It has a large, rounded fuselage, designed to carry heavy and large equipment. It has the largest cargo space and the largest payload of any glider thus far announced.

Liberalize Insurance on Schedule And Limited Non-Schedule Flying

Full coverage allowed for flex time without payment of extra premium under new provision put into effect by Conn. General.

Unlimited scheduled air transport flying and minimum-time non-scheduled flying have been brought under full life insurance coverage without payment of extra premium for the latter use.

New liberalized policy provisions have been put into effect by the Connecticut General Life Insurance Co. under which full coverage is given passengers on any country's air transport lines anywhere in the world, and by which extra premium payments for pilots and other crew members are cut approximately one-fourth. Disability, waiver and double indemnity are included for passengers.

Non-scheduled flying policies will be written at standard rates for minimum-time use and at low per-hour extra premium rates for extended travel.

Company-Owned Plans.—Company plan operations are classified in a particularly low rate, considered significant in view of the increasing number of companies now showing in extended use of company-owned plans in the post-war period. All other flying classifications are given the benefit of new life rates.

Connecticut General Life for years has written more than three-fourths of airline group insurance and is generally credited in the industry with being one of the most progressive and helpful insurance companies in the promotion of air travel.

The move came as a surprise both to the air industry and to the insurance field. It was expected, however, not only in the field of life insurance but in other aviation risks, but the Connecticut General move was made without prior notice even to agents of the company. In the past other companies have followed the leadership of Connecticut General, pre-announcing a general lowering of rates and conditions that have to some extent hampered the growth of aviation.

New Rates.—Particularly significant in the Connecticut General announcement are the new rates quoted for non-scheduled flying

airline and other pilots, and private flyers.

Commercial pilots now can obtain life insurance to the extent of \$25,000 at an extra premium rate of \$7.50 a thousand for full occupational coverage. This compares with \$10 a thousand previously quoted by Connecticut General and extra premiums ranging to \$35 and \$40 a thousand by

other companies. This rate includes domestic loss and return where one terminal is in the United States and the other is in the western hemisphere. Insurance of \$50,000 can be obtained by these pilots at the same rate, but with partial aviation exclusion rider. Commercial pilots and crew members on American carriers in transoceanic operations can obtain \$15,000 in insurance with an extra premium of \$15 a thousand, and \$30,000 as a partial aviation exclusion rider.

The same rates apply for pilots of company-owned planes when used in business flying only, with pilot's qualifications, plane, annual flying time and terrain comparable with the same factors in domestic air transport.

Procedures.—Persons flying as passengers in non-scheduled operations do not pay an extra premium when flying on business trips in company-owned planes up to 160 hours a year, or in charter flying less than 50 hours a year. Limit is \$25,000 unless less than 50 hours of annual flying is involved, in which case \$50,000 is allowed. An annual extra per thousand of two cents an hour is quoted for passengers flying more than 160 hours a year in company-owned planes and 35 hours in charter flying, but \$20,000. Less than 35 hours annual flying time on private business or pleasure if the pilot holds an airline or commercial certificate also claims the standard rate and more than 35 hours an extra of one per thousand of face cents an hour, with a limit in this classification of \$10,000.

Rates.—Professional pilots doing charter flying, student pilot instruction, surveying, photography and surveying come under the following rates: 50 to 100 hours a year, limit \$25,000, annual extra \$10 a thousand; 61 to 200 hours a year, limit \$35,000, annual extra \$15 a thousand; and more than 200 hours, limit \$10,000, annual extra \$20 per hour per thousand.

The personal equation and proportion of experience enter into the private pilot field, with the decrease factors being the experience of the pilot, expressed in terms of total flying hours, his record and reputation for "clean" error, estimated annual flying time, and type of plane, reason for flying and terrain over which flights are made. The schedule applying to pilots with private pilot's certificate or



NEW GLIDER TYPES RESULTING FROM AAF EXPERIMENTATION:

Almost in the duplex type is the CG28A, shown above, experimental glider with heavy payload, but limited cargo space, developed as part of the continuing study by the AAF to determine the limit is use for tactical

usefulness of gliders. Below is the CG28A, with largest cargo space and largest payload of any glider. This new design was developed to explore the feasibility of carrying very large equipment by glider.



higher rating, who have had at least 100 hours solo time and who fly only licensed planes up to 35 to 140 hours a year, limit \$15,000, \$10 per thousand for less than 400 hours solo experience, \$7.50 above 400 hours, 75 to 124 hours, \$15,000 limit, \$12.50 and \$10, 125 to 190 hours, limit \$25,000, \$15 and \$12.50, and 200 and over, limit \$30,000, \$17.50 and \$10.

Student Pilots.—Limit on student pilots is \$10,000, for which an annual extra premium of \$25 per thousand is quoted.

Experimental test pilots and crop dusters will, the company says, be considered only with a partial aviation exclusion rider. Military pilots will be considered for \$10,000 policies with partial aviation exclusion rider. Pilots and non-scheduled flight passengers paying an extra premium and those insured with a partial aviation exclusion rider will be considered for double indemnity excluding death caused by aviation. Whether caused by an occupational error or with a partial aviation exclusion rider, pilots will be considered for all plans of insurance issued by Connecticut General except five and ten year terms, income continuation and family income riders.

Indicator source, particularly in the transport field, were gratified

by the announcement of the new plan and in the comment of the president of Connecticut General Life that "it is just common sense that life insurance underwriting should keep pace with the truly extraordinary advances made in aviation." The splendid safety record achieved by our great airlines has more than justified our belief.

Standardize Wiring

A standard electrical wiring system patterned after American procedures has been developed by the Society of British Aircraft Constructors, Ltd., counterpart of the Aeronautical Chamber of Commerce in this country, and is now being incorporated in a "large new British aircraft series." It will be used in other planes as soon as design changes can be made, and will be standard for all types in the future.

The system, in addition to standardizing phone wiring, will make use of connector blocks for ease of maintenance in the same way that American planes now mount sockets that permit changing of wing or other units without re-wiring of all electrical connections to the unit.

Cancellations Reveal Termination Trends

Estimate of two experimental fighters also disclosed is an outgrowth of current changes.

Trend of aircraft contract termination is pointed up in cancellations reported for the last week in October, which also disclose existence of two experimental airplanes.

One cancellation involved McDonnell Aircraft's XP-67, an experimental twin engine fighter for which the production schedule was not available. Of two ordered, one has been completed and was involved in an accident, the other one is about 15 percent complete. The plant asked for termination to make way for other war contracts.

Another cancellation involved the Curtiss-Wright YP-55K, an experimental, fast, high altitude fighter. Two were contracted for and one has been completed.

Drop Fuel Tanks.—Significant in the changing war picture and development of planes was cancellation of external auxiliary jet fuel tanks, involving six contracts. Those were: Tappan Stores Co., Meriden, Ct., P-38, P-47, P-51, Severy-five gallon fuel tanks,

enrolled 18,300 seating \$432,327; American Slave Co., St. Louis, 116-gallon tanks for P-47 and P-51's, opened 18,700 costing \$1,058,096; Began Manufacturing Co., Chicago, 116-gallon tanks for P-47 and P-51's, opened 18,700 seating \$1,881,035; American Slave Co., St. Louis, 75-gallon tanks for P-47, P-47 and P-51, 4,450 costing \$477,718, plant conversion to manufacturing of knock-down version of same tank, Midwest Manufacturing Co. Galesburg, Ill., 75-gallon tanks for P-47, P-47 and P-51's, enrolled 11,154 costing \$705,892; Midwest Manufacturing Co., Detroit, 75-gallon tanks for P-47, P-47 and P-51's, enrolled 15,250 at \$793,886.

Other cancellations reported

- ▶ Alliant Division, General Motors—Canceled 1,458 aircraft engines for P-38, P-40 and P-43, contract \$18,838,890.
- ▶ Packard Motor, canceled 1,300 Packard Merlin aircraft engines for P-31's Lancaster and Mosquito, contract \$15,000,000.
- ▶ Lockheed Aircraft, complete all those assembled spares for P-38, undelivered balance of contract approximately \$30,074.
- ▶ Bell Aircraft, 46 P-59 two-engine jet propulsion planes, contract \$5,779,832.
- ▶ General Motors, Aeropropellers Division, propellers for P-38, previously canceled at Fisher Body, spare parts relating to 200 installation propeller assemblies, contract \$21,500.
- ▶ Wright Aeronautical B-358BBA aircraft engine deflectors and scoops, contract \$323,468.
- ▶ Allison-Chalmers, P-38 turbo superchargers, estimated contract for 1,500 amounting to \$1,303,146.

Coast Conference

Proposed legislation governing municipal and privately-owned airports, commercial and private flight and coming in preparation for increased aviation activity in California top the agenda for the forthcoming California Aviation Conference devoted to post-war planning set for Dec. 12-13 in the Sheraton-Biltmore Hotel.

The Los Angeles Chamber of Commerce Aviation Committee initiated the meeting and is joined by the Berkeley, Long Beach, Oakland, San Antonio, San Diego and San Francisco chapters of Commerce and California, chapters of the National Aeronautical Association.

"Blow Jobs"

Credit Army Air Force acquisition based at Marine Army Air Field and other Marine Corps bases with having started the stage that Douglas will use American jet propulsion fighter trainers wherever they appear.

Well out of the experimental phase of testing, the 37's are engaging duty in the tactical training of bombing and fighter groups in California desert.

To flight and ground crews alike the jet fighter trainers are "blow jobs."

WEST COAST REPORT

Non-Priority Seats Growing Problem

Situation worsening in traffic to Coast as P. 3 jumps up post in Pacific war.

By SCHOLER BANGS

Western divisions of domestic airlines are pressed a growing headache in their handling of non-priority passengers as the Pacific War reaches its peak. Civilian air travel is increasingly speculative, and hampered by irregular waves of priorities. Some routes now report up to 95 percent of seat space taken by military orders. Unpredictable offloading of an entire load of military priority passengers at one station is not infrequently leaving airlines agents too little time to round up "gate" civilians for the continuing flight. Those airlines that have been able to explain the reason civilians who have waited as long as several days at terminals often see planes arrive with as few as four or five passengers.

Super Fuel—Manufacturers whose interest in the personal airplane market has been late warms are heartened by the prospect of taking priority after the war the "super fuel" now in military use. It will boost tremendously the available horsepower of small engines (as well as large), sharply increase miles-per-gallon, and will increase pay load in proportion to the fuel load saved.

"Hillercopter"—Look for a new surge of helicopter experimenting, and a trend toward the super-powered dual rotor system, long depicted but now proved reasonable by Stanley Miller, Jr.'s "Hillercopter." Why his motor combination works is still Miller's trade

secret which may lead copyists into engineering hot water. Miller already is in experimental production of his "copter" with Henry J. Kaiser looking at a factory established in the former California National Guard armory in Berkeley. The yellow, bug-like "copter" regularly flies from the armory's small dirt field and flies in and out of the Berkeley business district. Some Berkeley residents have protested. But Berkeley city officials turn a deaf ear. They want their city to be known as the birthplace of the West Coast's first practical helicopter.

Radar and Safety—What radar may be expected to do in adding to the safety of air travel post-war is indicated by a letter to John W. Myers, Northrop Aircraft test pilot at Hawthorne, Calif., from Lieut. A. W. Lockhead, Black Widow pilot in the South Pacific. "My boy pulled up a target at five miles, and we closed in to about 1,000 feet in a five.".

Plane Design Credit—West Coast manufacturers who have hesitated at irritating their best customer now are taking the lead in claiming credit for development of the military aircraft. The Douglas Field has long enjoyed much of the credit. Now Aircraft War Production Council, West Coast, reports: "Every airplane now helping to maintain American air supremacy and breed the nation closer to victory was primarily designed and developed by one of the private airplane manufacturers, based on requirements authorized by government agencies."

Hiring Problem—Warplane manufacturers momentarily needing thousands of new workers, and confronted with continuing loss of workers who have been seduced by the idea that the war may last a long time, may find the AAF unwilling to lend extensive aid in drives for new employees. It is believed that high Army officers do not want to risk being responsible for hiring workers one day and laying them off the next as overseas develop. Preservation of civilian pool will have been a critical consideration in military production in factory problems.

425 Mph. Airframes—Unpublished has been the fact that TWA is working on a world air route schedule based on 425 mph cruising flight. It is preempted by shrewdly planned airlines drawing boards of West Coast factories now busily courting civilian post-war customers.

Commando Sales Promotion Group Activated by Curtiss-Wright Corp.

Economy and utility of largest twin-engine airliner, compared with four-motor planes, is expected to be keynotes of C-46 presentation.

Curtiss-Wright Corp., with two contracts for contracted versions of the C-46 Commando and others pending, has activated a sales promotion section assigned to the Commando project.

With the Commando the largest twin-engine airliner in existence, aircraft sales agencies for immediate post-war years are revealing around the respective advantages at twin-engine and four-engine operation, with Douglas, the most in the airline field with its four-engine DC-4 and DC-8 and Curtiss in the two-engine field.

Economy Factor—While some of the airlines are proposing to use four-engine equipment for both long and short hauls, the economy and utility aspect of the twin-engine plane are forcing the airlines to consider the larger size of Commando sales promotion. Advantages of four-engine operation in long distance operations are being countered by the Curtiss sales organization, which is concentrating on the 300- to 600-mile field.

The two airlines that have already placed Commando orders are Eastern and National, competitors on the eastern seaboard run from New York to Miami. Each also has ordered four-engine equipment from Douglas, apparently with the intention of using the larger equipment for long distance, non-stop operations and the twin-engine for shorter runs, the two flying into the whole picture in their own economical leagues.

Piesigns—Douglas, however, is offering its DC-4 for the same type of medium and short operations, and some airlines are maintaining that they will have to operate four-engine equipment as a matter of practice on the shorter operations. They fear, they say, that passengers will not react favorably to departing from four-engine planes at connecting airports and resuming their trip on two-engine planes.

On the other hand, aviation traffic studies have indicated that the general traveling public does not have any prewar ideas on the subject of twin or four-engine

planes, and this factor, plus flexibility of operation and ease of design for ground handling of passengers and cargo, will undoubtedly be the basis for the Curtiss-Wright sales promotion.

"Mercuro"—A new factor coming into the field will be the Martin Mercuro, which might offer some competition in the 300-400 mile twin-engine field. However, Curtiss does have the advantage of current production slurring deliveries, probably one of the largest single elements in the immediate post-war airline field.

The Commando will carry between 36 and 48 passengers depending on minor appointments. The DC-4 carries 44, the DC-6, 38 and the Martin Mercuro, 38. It may be significant that four of the new Curtiss appointments are of men who have had long experience in the South American field as well as in domestic airline and manufacturing operations. In addition to the Commando's obvious sales possibilities in this country, Curtiss long has been a well

known name in South American and European aviation, and the Commando is admirably suited for operations in the lands to the south, particularly in the cargo field.

The appointments were announced by R. A. Warren, manager of the contracts department at the St. Louis plant.

F. T. Sterling, former airline executive, is named assistant manager of the contracts department at the St. Louis plant. Sterling has been associated with Pan-American Grace and Baltimore Airways in South America.

Marvin J. Parks, former assistant operations manager and divisional maintenance engineer of Pan-American Grace Airways, is in charge of the sales promotion staff. Before joining Pan-American Grace he had been a test pilot and production engineer.

G. Sumner Ireland will become eastern representative with offices at the Curtiss-Wright executive headquarters, 30 Westchester Plaza, New York City. He has been a pilot since 1916, designed and built the Ireland four-engine biplane for several years in the late 1920's, tested some variants of Curtiss Flying Service.

T. D. Harvey will be southeastern representative with offices at the 35th Street airport, Miami. He will be in charge of major sales when he is relieved from the AAF



F. T. Sterling

Marvin J. Parks

C. K. Thrush



B. F. Wolford

T. D. Harvey

G. Sumner Ireland



Clearing of New Rounded Nose of C-46 The familiar cigar-shape of the Curtiss-Wright C-46 Commando has been changed in favor of this new version, now going on military ships and to be a feature of the Commando bomber. The new nose gives better pilot visibility. It is "bird-proof" and equipped with a special de-icing system. The small window at the side of the windshield can be opened by the pilot without getting any air blast. The side window is a conventional side-back type, but has a pressure-locking device for bad weather operation.

early this year, has been flying nearly 50 years and has logged thousands of hours as an airline and military pilot.

■ **C. K. Travis**, export representative, with headquarters in St. Louis, served on a military mission to Peru while with the Army Air Corps, later flew for Pan-American and in 1933 established an airline for the Panamanian government. He piloted Curtiss-Wright in 1933.

■ **R. F. Wolford** will head the midwestern and western organization, with headquarters in St. Louis. Wolford has a broad background of aviation engineering experience with Douglas, Northrop and has been project engineer on the Commandos with Curtiss-Wright.

ACC Fets Delegates

The aircraft manufacturing industry, acting through the Aeronautical Chamber of Commerce, was last week in Chicago at a dinner for delegates to the International Civil Aviation Conference. Among the speakers were Eugene R. Wilson, United Aircraft, chairman of the Chamber Board of Governors; Scott Russell, Chamber's general manager; and Assistant Secretary of State Adolf A. Berle Jr., head of the United States delegation. Copies of the Aircraft Yearbook for 1944, official publication edited by Howard Menges, were presented to delegate guests.

Machine Tool Talks Give Hint of Policy

Disposal of Lend-Lease aviation equipment so far left in hands of Allies is expected to be major problem after war.

First indication of government policy toward a major post-war problem—the billions of dollars worth of Lend-Lease aviation equipment that will be left in the hands of our Allies after the war—is found in the current machine tool discussions.

That problem, part of the general surplus supply problem, as one of the most delicate facing our government. A good portion of the planes sent to Britain and Russia under Lend-Lease, will, of course, have been destroyed. Another sizable percentage will be war worn and obsolete.

■ **Plane Stocks Left**—But there will still be left in the hands of our Allies thousands of modern bombers, fighters and transports; thousands of spare engines of all types, and hundreds of millions of spare parts. And all, under the terms of the Lend-Lease agreements, will still be the property of the United States government.

Conversations now being held between high American and British officials regarding the disposal of a large number of machine tools, because of special significance

to the U. S. aviation industry. The British have asked us to state terms under which these machine tools can be turned over to overseas manufacturers for peacetime production.

■ **U. S. Position**—The U. S. government has taken the position that:

■ The British manufacturer pay our government, in cash, a price based on a formula which takes into consideration the apparent value of the remaining usefulness of each tool, as well as its value on the open market.

■ The tool cannot be re-exported by the British purchaser without the consent of our government—and in no case can be sold into the U. S. market.

■ If the British decide to accept our offer it must apply to the entire lot of tools now under discussion. In other words, they cannot pick out the most efficient tools and return the others to us.

The British are said to have raised objections to our pricing formula and the subject is now under discussion.

Most significant factor in our government's stand, is that it apparently represents a victory for a group of officials in FEA and the State Department who have been fighting vigorously for what they term a "reasonable and business-like" policy for all Lend-Lease settlements. Hotly opposing them have been two other groups—one holding the viewpoint that we should allow our Allies to keep all Lend-Lease goods in their possession at the end of the war, as an example gift; the other favoring the sale of Lend-Lease leftovers as a means of inducing our Allies to enter into international trade agreements.

ACC Public Relations

Regional public relations committees of the Aeronautical Chamber of Commerce have been organized with Jess Swetzer, Curtiss-Wright, chairman of the eastern region committee and John C. Cassidy, Lockheed, chairman of the western group. Other members are J. A. Pitt, Sperry vice-chairman and W. J. Moore, Kellogg, secretary in the east and Harold Mansfield, Boeing, vice-chairman in the West. The two committees include members of the Public Relations Advisory Committee whose headquarters are in the respective regions.



Now . . . a better way to tell ice where to get off!

THIS IS a new B. F. Goodrich De-Icer—the Type 11—shows here mounted on a wing mock-up for testing. It's lighter, lasts longer, costs less to maintain and, most important, provides better protection against icing.

Although it operates on the same principle as De-Icers now in service, several refinements in design and construction have resulted in improved performance. Here are a few of the new features:

■ **Improved tear-resistance:** New all-surface ply of elastic fabric which resists tearing.

■ **Smother cross-section:** Attach-

ment edge is thinner, reinforcing strips are eliminated, tubes are recessed.

■ **Improved tubes:** Tubes are made of highly stretchable nylon fabric.

■ **Lighter:** Sponge filler and reinforcement strips have been eliminated; rubber and fabric have been used more effectively.

■ **Better ice removal:** Improved tube arrangements, made possible by stronger, lighter materials, provide more efficient ice protection.

■ **Longer life:** New De-Icer installs with less strain on the rubber, lengthening its useful life.

■ **Reduced maintenance:** Most of the features mentioned here contribute to lower maintenance requirements.

All these refinements for better performance have been approved by the CAA and the Army Air Forces. The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

Sleepway on Highway
B.F. Goodrich
FIRST IN RUBBER

Magnitude of Scrap Problem Reveals Need for Overall Plan

Seven areas already set up by Army for distribution of scrap and excess aluminum alone and four more are to be activated; Navy planning eleven new salvaging centers to seven already functioning.

Precursor efforts to handle the scrap and salvage problem reveal an increasing need for an overall plan, and there are indications that an assessment of material needs greater than anticipated will have to be handled, salvaged and stored. Here are some current phases of the problem affecting aircraft:

► Army has set up seven scrap areas for distribution of scrap and excess aluminum alone. Four more are to be activated.

► Navy is adding eleven new centers to seven now functioning for handling all types of material for scrapping, salvaging and redistribution.

► Office of Price Administration has plugged a loophole in the scrap sales field by changing its definition of scrap to include all surplus industrial materials.

► Quantities of aircraft salvage will move into storage centers of Metals Reserve Co., RFC subsidiary, when Army and Navy shortly release numbers of obsolescent and inventory combat planes to surplus. There is little, if any, hope that any of this material can be sold and current plans are to store it in the open on the theory that declassification costs will be less than costs of drastic storage.

► Bold bright spot in the picture will be seriously affected by the shutting down of war production and the movement of an increasing volume of excess stocks in competition with it. This is the aircraft industry's excess inventory program, which, despite reports to the contrary, has been successful in moving quantities of materials which otherwise would have been a serious drain on the industry.

Army depots for handling all types of scrap will number in the scores, even though in terms of the Surplus Property Bill they will be utilized only in processing excess materials into surplus.

In the case of aluminum, the bulk of the material consists of supplies from war plants and the balance chiefly aircraft that have crashed in this country. Seven of the centers already are in operation at Philadelphia Ore. Dock, for

Baltimore and Philadelphia, Chicago, to serve Chicago, Kansas City and St. Louis; Camp Phillips, for Kansas City and Wichita, Fort Lewis for Seattle; Somersville Quoniameter Depot, for New York City; Lake Ontario Ordnance Works, for Buffalo; and Grand Blaise, Mich., for Detroit areas. Also are: Camp Forest, Tenn. for Memphis and Nashville; Fort Verde, Tex., for Dallas and Fort Worth; Camp Haan for Los Angeles; and Camp Greuber for Tulsa and Oklahoma City.

► **New Aluminum Scrap Sources**—Virtually all these areas are new sources of large quantities of aircraft aluminum scrap, which is expected to be the most serious problem in view of the approximately 80 percent use of the metal in aircraft production. It is not at present too serious a problem, but early difficulty in moving excess stocks indicates heavy cancellation supplies will exceed anything the market can absorb for some time. As of the middle of October, aircraft sources report 7,000,000 pounds of 12,000,000 in government-owned excess aluminum inventories shifted from war plants had been sold. This illustrates the wisdom of the aircraft industry in getting a start while the market is more receptive than it will be when other programs get under way. The increasing use of the storage problem also indicates

plants keeping their inventories rapidly low and quickly segregating surplus stocks will have an easier time of it than those which attempt to clear the decks late in the day.

► **Navy Program**—The Navy, with seven Material Redistribution Centers now in operation, will open eleven others. These centers will take excess supplies from industrial centers and material from Officer Material Recovery Units. Some centers will be used as storage centers for material of permanent value to the Navy. All will receive material for salvaging, redistribution and storage for surplus sale.

Centers now in operation are at Buffalo, N. Y., and Edinboro, Pa., both for machine tools, Edgewater, N. J., for heavy equipment; Irvington, Calif., for electronics material; and Chicago, Port Pleasant, W. Va., and Alameda, Calif. Another center is under construction at Stockton, Calif. Similar centers will be situated at Corpus Christi, Tex.; Jacksonville, Fla.; Lawrence, Mass.; Jeffersonville, Ind.; Turrence, Calif.; Stamburgh, O.; Newburgh, N. Y.; Trenton, N. J.; Lonsdale, R. I.; and Bellingham, Wash.

► **Combat Planes**—Most of the combat planes of the services eventually will be turned over to the Surplus Property Board for scrapping. They will go to the Metals Reserve Co. Industrial supplies will be termination inventories and excess stocks left over from contracts changed that obsolescent quantities of already formed units. Government-owned scrap from industrial plants will be taken over without question, while company-owned excess inventories can be handled in a variety of ways, among them the aircraft industry method of sale to Metals Reserve for \$1, with losses absorbed by the Treasury Department in tax procedures.

Virtually the entire amount handled under the aircraft industry plan has been government-owned materials, with company-owned materials slow in moving into the disposal plan. However, inter-company transfers and sales through such organizations as the Beech subsidiary have been carried out satisfactorily.

This can be termed an alleviation of the eventual mass dumping of excess supplies at the end of the war.

Well more than half the 32,000,000 pounds of steel in the war-bonusing plan have been moved,

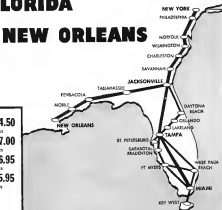
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with 12,000,000 pounds remaining. Of 400,000,000 pieces of hardware repaired, only 18,000,000 pieces remain. Copper has been spelt in the movement.

Martin Device Eases Handling of Mars

U-shaped tug adapted from "sea miles" of invasion troops is designed to speed air terminal work.

The Glenn L. Martin Co., which has been making a bid for the international air market with its huge flying boats has disclosed plans for new methods of speedy handling of the ships of the air at terminals.

Plans of the system is a new U-shaped tug adapted from the "sea miles" used by invasion troops. Powered with three high-performance outboard engines, the tug already has been tested. It is designed to fit around the hull of the flying boat, maneuvering it into newly-designed, tidal foot docks jutting out from a fixed pier.

Landing Facilities—In outlying areas, say in South America, inexpensive landing facilities can be provided through use of the same general type equipped as barges.

Yet another system would employ high speed cables to guide and dock the flying boats at floating terminals. This is somewhat similar to the system devised by Louis Frank J. Walters, USN, for use with Mariners and the M-ships. The Navy also has used a U-shaped

dock of the type disclosed by the Martin Co., for servicing and loading the Mars at the Alameda, Calif., Naval Air Station.

Wright Bros. Lecture

"Compressible Flow in Aerodynamics" will be the subject of the Eighth Wright Brothers Lecture of the Institute of Aeronautical Sciences to be presented in the U. S. Chamber of Commerce Auditorium at 3 p.m., Sunday, Dec. 17.

The lecture will be John Stock, chief of the Compressibility Research Division of the Langley Memorial Laboratory of the National Advisory Committee for Aeronautics.

The Robert J. Collier Trophy for 1943 will be presented by the National Aeronautics Association in ceremonies preceding the lecture.

New Air Publication

A new learned journal, *Air Affairs*, to be devoted to the economic impact of the transition from surface to air transportation and its effect on the mode of living and economy of the nation is being projected by William D. Pennington, of Washington, D. C.

Pennington said his plans are not far enough advanced to be detailed at this time. It was understood, however, that they contemplated quarterly issuance of the proposed journal and that it would be economic rather than technical.

Subscriptions—A number of individuals and companies in the aviation industry have been ap-

proached regarding the journal and, while the industry has not given its support as a group to the publication, it was reported that several aviation executives and some companies have made subscriptions.

McDonnell Contract

McDonnell Aircraft's divisions at St. Louis and Memphis have been brought into the production program on Boeing's B-29 Superfortresses. The company will manufacture the pressurized section of the fuselage. Fabrication of the structural details will be in St. Louis, involving about 700 workers while fabrication of installation details and assembly work will be in Memphis where 1,600 workers will be employed at peak program. Initial deliveries are scheduled for the first part of 1945. Peak production is expected by next October. McDonnell will be a major sub-contractor of The Glenn L. Martin Nebraska Co.

Cub Aids in Rescue

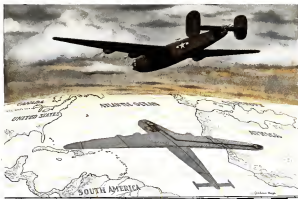
Story of how an unknown artillery liaison observer firing an unarmored Cub observation plane through terrific anti-aircraft and ground fire, directed American artillery fire to rescue a "lost company" of American soldiers, recovered by the Nazis in France near Montargis, was told recently by 1st Lt. Ralph Graves, who was in the surrounded force. Graves revealed the incident during a recent visit with his father, Henry B. Graves, safety director at Emory-Rothchild School of Aviation, Miami, Fla.

The observer spotted the isolated group, Graves said, and reduced to artillery batteries which dropped a curtain of shells on the Nazi position to cover withdrawal of the Americans.



Speedy Handling Systems to Speed Service: General view, above left, shows artist's conception of how the Glenn L. Martin Co. would handle flying boats of the Mars type at heavy traffic centers. Right—boat

it would be docked at isolated ports of call. Note the self-contained heat for loading and unloading. The Martin Co. is making a bid for the international market with commercial flying boats.



Sperry Gyrosyn Compass

The Directional Gyro with Magnetic "Sense"

See diagram on inside of airplane above.



The Sperry Gyrosyn Compass is a directional gyro synchronized with the earth's magnetic field.

It combines the functions of both a Directional Gyro and a Magnetic Compass... directest indication, accurate magnetic headings... without tediously turning error or correction.

The Gyrosyn Compass is an electrically driven directional gyro precisely controlled by a Flux Valve to indicate magnetic heading directly or through Repeater.

The Flux Valve is a device for detecting the direction of the earth's magnetic field. Its design provides light weight, hermetic sealing, and small size for rapid mounting in the wing tip. It has no rotating parts.

The Gyrosyn Compass weighs only 30 pounds including one Repeater. Provision is made for additional repeaters and for forwarding accurate indication required by any other equipment.

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AVIATION NEWS • November 12, 1944



WADSWORTH IN CANADA. UNITED STATES AIRCRAFT IN SERVICE. * SERVICE +

New Canadian airfield map shows airfields for which Canada reimburses the United States for construction costs of \$76,311,551. Other Canadian airfields also are shown.

Data on Canadian Port Outlay Revealed

Map is released showing sites of U.S.-built airfields taken over by Dominion for \$76,311,551.

Details have been revealed at Ottawa by the Canadian War Information Board as to cost of construction of airfields on the Alaska route and the Hudson Bay route built for military purposes in Canada by the United States and recently taken over by the Canadian government for \$76,311,551 (AVIATION NEWS, Aug. 16). A map also has been released showing location of the jointly-built ports and other Canadian airfields.

Breakdown.—Figures released show Canada is paying \$33,311,196 for the United States' share of the construction of the Northwest Staging Route (to Alaska), \$3,323,057 for flight strips along the Alaska Highway, \$1,384,156 for flight strips along the Mackenzie River (for Canal oil development), \$27,490,333 for the Hudson Bay route (to Greenland), \$3,637,900 for the airfield at Min-

can, Que., \$941,000 for work at the airfield at Goose Bay, Lab., and \$1,342,330 for the telephone-teletype line from Edmonton to the Alaska boundary.

Canada assumed costs incurred on United States' account of \$34,781,843, consisting of \$13,389,893

on the Northwest Staging Route, \$1,350,810 on the Hudson Bay route, \$9,920,859 on the Goose Bay airfield, and \$3,161,000 on project of Northwest improvements.

New Ceiling Meter

Consistently accurate daylight readings of cloud ceilings through a pulsating mercury light system with photoelectric detector has been developed by the U. S. Weather Bureau and is being produced by the General Electric Co. With the system, clouds as high as two miles can be quickly measured in daylight.

The device consists of a mercury arc projector, a pickup unit and a recorder providing a continuous record of ceiling height and relative cloud density. A ray super-high-intensity quartz mercury lamp is mounted in the focus point of a searchlight mirror to throw a 120-cycle-per-second pulsating beam directly into the sky. The pickup unit is situated 1,660 feet from the projector and is tuned to the same frequency as the light pulse in order to pick it up from background light.



WADSWORTH SKILLS



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Zips & Rivets
Gas per Airflow
Air Seal Building
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... built up through half a century of leadership in the exacting Watch Case Industry will be available soon to many manufacturers who will require large quantities of small precision parts for their postwar assemblies.

Work of this character is now being supplied to many leading companies which normally produce radio equipment, refrigerators, automotive parts, precision instruments.

Illustrated are nine small components of an Ordnance assembly in which Wadsworth furnishes in great numbers The production of these pieces, which are held to very close tolerances, brings a score of special Wadsworth facilities into play.

Wadsworth workers' feeling for precision and their ability to get work out on time will ease postwar headaches for many producers.



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THE *Wadsworth* WATCH CASE CO., INC.
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PENNIES PROTECT MILLIONS

Protek-Plugs • the Modern Moisture Removal Method

It begins with aircraft engines. Once, it took many hours to remove the grease that was necessary to protect the cylinders of engines in transit.

Today, Protek-Plugs are removed from the spark plug openings, the spark plugs are installed, and in minutes, the engine is ready for service.

Protek-Plugs are hollow, transparent plastic containers, filled with Silicogel, a material practically chemically inert, with a tremendous capacity for water. They remove corrosion-producing moisture from the cylinder walls by absorption. When the Silicogel approaches saturation, the plugs signal "Danger," as their color changes gradually from bright blue through violet to pink. The spent plug is then replaced with a fresh Protek-Plug.

Protek-Plugs are at work today by tens of thousands, not only in aircraft engines, but in delicate mechanisms of all kinds. There is ample proof of their value from every battle front. Costing pennies, they guard vital war equipment worth millions.

Tomorrow, this war-horn product will protect more than the engines of aircraft in transit and in storage. It will find dozens of other jobs guarding the contents of peace from moisture damage. Write for our illustrated booklet on Protek-Plugs.



CARBURETORS
FUEL PUMPS
PROTEK-PLUGS

CHANDLER-EVANS CORPORATION SOUTH MERIDEN, CONNECTICUT, U. S. A.



New British Naval Air Fighter for Pacific: This war-baby has gone into service. Note the unusual folding heavily armed fighter reconnaissance plane—folding arrangement. The Firefly is fitted with four Firefly which will operate from British carriers 600 ft. down, cannon and equipped with a camera.

British Reveal Data On Fairey Firefly

New reconnaissance-fighter disclosed as having participated in attacks on battleship *Togata*.

Some details of the Fairey Firefly, claimed by the British as a fighter-reconnaissance plane, have been revealed by the British after its participation in several aircraft carrier attacks on the German battleship *Togata* in Norway. It is one of a series of British planes designed particularly for shipboard operation and not merely adapted from land-based types, such as the new *Seafire*.

The Firefly is powered with the new 12-cylinder Rolls-Royce Griffon, more powerful successor to the Merlin, and rated at better than 2,600 hp. A three-blade Rotol propeller is used. Carrying a crew of two, it has a span of 44 feet, six inches, is 37 feet long and 13 feet 7 inches high. Armament re-

vealed consists of four 50 mm. cannon mounted two in each wing. The wings are folding type and undercarriage and flaps are operated by a Lockheed hydraulic system.

Prepare for Pacific Action—The British have been getting quantities of American carrier fighters and other types in preparation for Pacific action. The Firefly has been used as strafing operations, and evidently is not intended to operate in purely fighter actions against the Japanese.

Gunners to Join Surplus Stocks Soon

Transfer of most, if not all, of the Burchfield AT-31 Gunners to surplus in the near future will class one of the most fantastic plane construction stories of the war. Some 200 were constructed, it is understood, in different models charged an average credit for advanced trainers shifted.

The Gunner was built in a factory located, at government direction, in an area where the labor supply was totally untrained in plane construction skills and operations. Production operations were never entirely satisfactory.

Put to Various Uses—It is one of the most efficient ships of that general type designed, yet it never seemed to fit into service needs. At times it was built as a bomber crew trainer, as a transitional trainer, as a gunnery trainer, as a bombardier trainer and it has been used as a personnel transport and a utility cargo plane.

It is probable that the surplus stocks will be sold in other countries, where it is in demand as a trainer and as a reconnaissance and photographic plane because of its exceptional performance at high altitudes. The design may be used in foreign manufacture, but it probably will not again be built in this country.

The Gunner can be converted to an eight-place transport.



When Clifford's THIN-METAL KNOW-HOW }
discovered THIN ALUMINUM BRAZING... }

WEIGHT
SAVING = $\frac{2}{3}X$

By removing copper oil coolers and coolant radiators from one of their famous fighters and dropping in aluminum models—without any design change—weight-conscious engineers of the U. S. Army Air Forces saved approximately 120 precious pounds.

This vital victory over weight—symbolized by $\frac{2}{3}X$ (where X equals the weight of sub-soldered copper coolers and radiators)—was made possible by Clifford's discovery of the elusive method of brazing aluminum tubes having very thin walls.

Already battle-tested on wide-spread fighting fronts, Clifford's Feather-Weights are now being applied to another Army Air Forces' fighter. Here the potential weight-saving is approximately 260 pounds.

Less weight, greater resistance to heat and pressure, longer life—are the results when aluminum replaces copper in aircraft oil coolers and radiators.

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Save $\frac{2}{3}$ The Weight
same size and shape

PRIVATE FLYING

Federal Works Agency Takes Hand in Post-War Port Planning

White House, Budget Bureau and Army and Navy also expected to play important roles in development of airfields throughout country

By BLAINE STURBEFIELD

Federal Works Agency has taken a hand in post-war airport planning. So has the White House and the Budget Bureau, and the Army and Navy. Political interlocking is assuring importance of the airport program. President Roosevelt mentioned airports twice in his campaign speeches.

Some weeks ago the Civil Aeronautics Administration served a report, in accordance with a formal request from Congress, recommending a post-war air field development plan, mostly for private funds.

Down to Budget Bureau—The report went to the Budget Bureau, in conformity with an executive order, for examination in relation to other proposed public works, and for any suggestions the Bureau might have. For some time the Bureau held up the report much to the annoyance of some CAA officials and others interested in airport programs.

The Budget Bureau recently sent the report back to William A. M. Burden, assistant Secretary of Commerce for Air, with several suggestions not yet made public. Among the recommendations, was one pointing out discrepancies between data submitted by CAA and by the Federal Works Agency, which has been making an airport survey in connection with its post-war public works proposals.

653 Post Projects—FWA finds, in its report, that 144 non-Federal government units, meaning states, counties and municipalities, are planning a total of 653 airport projects of all kinds, which will cost a total of \$510,325,000. Of this amount, \$24,124,000 is on hand, \$13,423,888 is being negotiated for, and the balance is still to be raised.

Presumably the local governments having these airport plans expect Federal aid funds in some proportion, as result of proposals

made in public addresses by CAA officials, and in airport bills before Congress, notably the Randolph bill. At any rate the figures are fabulous, for they are not only merely replies to a questionnaire, but they include projects in construction progress, in the design stage, in the preliminary planning stage, and just gleams in city fathers' eyes.

20,000 Suggested by AACA—Even though FWA's report of airport projects means little or nothing in terms of the need for airports, nevertheless CAA airport specialists will have to write up their justifications for their own proposals which, it is taken for granted, are for about 3,000 airports, nearly all for private flying and calling for something like 50 percent of Federal funds to be matched with local funds. One point they may make when they send the document to Congress is that the Aeronautical Chamber of

Commerce has suggested 20,000 airports as a starter. And anybody who adds up airport requirements, city by city, taking Washington, or St. Louis for example, finds startling totals for the nation.

There is no doubt that a large airport program will be approved by Congress early next year. Practical need for the facilities has strong political backing, as also has the job-making factor.

AAF Program—National Aeronautic Association, in its Nov. 4 Newsletter, says both the Army Air Forces and the President are preparing airport plans. NAA sessions are not revealed. Investigation by AVIATION NEWS indicates the White House has taken an interest in the Federal Works Agency's above described.

AAF merely states now, as it has in the past, that it is conducting a continuing inquiry into the disposition of its airports not needed after the war. This refers not to those built and leased to Army by CAA, but to those built by the Army itself.

Airway has been racking its brain and still does not know what a surplus airport is good for. Which fields to keep for peacetime operations cannot be determined until the Government knows what sort of peace will be reached, then, and in turn what size and type of air forces will be maintained. Those airports not needed will become instant battle grounds of politicians who want to keep them going. But such problems, and actual disposition of the ports, will



SMALL AIRPORT ADMINISTRATION BUILDING:

The seat, white administration building of South Dayton (Ohio) airport, above, is an example of what can be done at relatively small cost, even on the personal plane airport. Besides the job-proof concrete tower, the building includes a lounge for pilots and other visitors, record room, operations office, and private office for the supervisor, Gerald Chatterton. The modernistic building is of brickwork construction finished in stone, and next ground drainage adds to its attractiveness.



FLYING GOVERNOR

Ellis G. Arnall, governor of Georgia, left, is shown at the end of a 4,300-mile air trip through the Middle West, and J. W. Weaver, Southeastern Air Service pilot, who flew the governor on the day trip.

devolve upon the Surplus Property Administrator, not the Army.

► **Repeals on Leasing**—Army and CAA have received some inquiries from persons interested in leasing fields after the war. But military opinion is that the Air Force and Navy air arm fields destined surplus will be of little commercial use.

All fields built by CAA, and turned over to the Army and Navy for emergency use, were sponsored by municipalities or counties. There were no state sponsors. Sponsorship is a rather vague term. The government paid for the fields (about \$100,000-200,000) and the sponsors "leased" them to the service. Most of these leases expire within six months after the cessation of hostilities against the United States. Under the leases, civil aviation can use most of the fields in conjunction with Army or Navy, but none of them are exclusively military. If Army or Navy wanted to take any of the CAA fields for permanent use, either could do so, but probably will not. These fields are nearly all located within commercial reach of cities, and they are expected to meet the needs of maintenance scheduled air transport for some years to come.

► **Cities Furnished by Cities**—The cities furnished the land, in nearly all cases, while CAA furnished materials and labor for runways, buildings, and some of the airfield. The cities agreed to take over the fields after the war and

operate them. Just what will happen in certain cities had better locations, and want to build new fields and abandon CAA property, is not known. In the one test case so far, the city was talked into keeping the airport in reserve.

Despite frequent official statements that the bulk of airport expenditures will be for private and other non-scheduled aviation, many local governments are still uncertain what plans to make. National Aviation Trades Association's bulletin editor states that, in a statement received recent airport conference, he found conflicting advice being given to airport planners. He has written a primer lecture on the subject which every responsible airport official ought to read.

Riddle Reports Gain in Brazil Aviation

Growing aviation consciousness in Brazil is reported by John Paul Riddle, operator of the American-staffed Escola Technica de Aviao at Sao Paulo, Brazil, on his return to Miami where he is spending a month at his instructors' school. While original capacity of his Brazilian school has doubled, the waiting list continues to mount, with enrollment from every state.

One boy walked 1,900 miles to Sao Paulo to apply, and a number of the unsuccessful applicants have found employment at Sao Paulo and are studying to satisfy entrance requirements.

► **Approved by AAF**—The school was established last November by Riddle, at request of the Brazilian Air Ministry, and with the approval of the Army Air Force. American flight and ground school instructors and administrative personnel are trained at the Miami instructors' school, in Portuguese and in Brazilian customs before being sent to Brazil. American students at the Sao Paulo school are trained for the Brazilian air force.

Riddle expects the awakened aviation interest in Brazil, as a result of the military training now being given, to have a three-way effect in post-war civil aviation relationships between the United States and Brazil.

Briefing

For Private Flights and Non-Scheduled Aviation.

By ALEXANDER MCDURELY

If for no other reason, although there are many other reasons, the NATA St. Louis convention, Dec. 5-7, should be worthwhile on account of the flight demonstrations scheduled for new prototypes of personal aircraft, built by various manufacturers. Plan is to limit demonstrations to distributors, dealers and agents. Some of the most desirable personal planes may not be ready by that date, but a good representation is expected. Re-opening of the old St. Louis Forest Park airport for the demonstration is planned.

► **Pilot's Lounge**—At Columbia, S. C., municipal airport, Hawthorne Flying Service, the operator, has remodeled the municipal hangar to provide a pilot's lounge complete with red tile floor, fluorescent lights, easy leather chairs and divans, photo murals and wall regional maps.

► **How to Fly**—While no book will ever take the place of actual flight instruction, the new title "How to Fly" book written by dependable Rex Cleveland, is worth while reading for almost any flyer, and full of essential information that would-be pilots and flying students should learn eventually, one way or another. It's free for the asking, by writing to MacGregor-Goldsmith, Inc., John & Shirley Smith, Cincinnati.

► **Planes for \$5**—Wind-damaged surplus planes, mostly small biplane types without engines, sold for prices ranging from \$5 up to \$4,000 at an auction held at Putnam Field, Dayton, recently. A Cleveland bargain-hunter bought an Aeroflex, one engine, and in a "merry confusion" for a \$5 bid, the 1934 planes, and three gliders, brought a total of \$1,484. Of the number 48 were Taylorcraft 1-B, 108 Aeroflex L-8s, and one each Paper 1-4, Interstate L-6, Lockheed AT-15, Beechcraft UC-41, and North American O-45.

► **Successor**—Buckmaster, Oklahoma City's Second National Aviation Clinic Nov. 18-19, should offer answers to many of the questions about personal aviation. Scheduled are talks on the post-war personal plane, its utility, markets, marketing methods, and surplus and airports, by some of the best brains in the aviation industry.



NAVAL RESERVE HANGAR. For this hangar (NAT-117) Timber Structures fabricated 230' steel braced housing beams (with a large) design designed by Bureau of Yards and Docks Contractor, Standard Construction Company.

ORGANIZATION IS IMPORTANT

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One business in the prefabrication of timber trusses, column arches, bridges and other heavy items. It's called Timber Structures engineering, manufacturing, shipping and erection service is highly organized, we have been privileged to work closely with the aviation industry, governmental agencies and the armed services in emergency, permanent construction of many kinds. For example:

1. Aviation manufacturing plants for the production of airplanes and parts.

2. Miscellaneous aviation housing for Boeing and others.
3. Warehouses, hangars, varied structures for the Army and Navy.

Many assignments we are not permitted to discuss, but all of them, war and pre-war, have resulted in organization techniques that is available to you for post-war construction.

Wouldn't that be a good case for you to check into the economy, strength, low maintenance and permanence of timber as a building material? A new book of our work "Engineering in Wood" is available on request. We're prepared to serve you in timber, allied structural materials.

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SCOUTS SOLO PARKS ENCOUPE.

Can a boy of 16 drive the family engine of the future? On the basis of an actual training test, Parks Air College, East St. Louis, Ill., reports that boys of high school age can solo a non-conventional Scout-type plane quicker than adults. Actual training showed one Boy Scout, ages 16-17, absorbed flight instruction quicker than older inmates were ready to fly the plane after 3 hours 10 minutes average dual instruction. The soloing youngsters, from New Jersey, Wisconsin, Ohio, Missouri and Illinois, are shown above with the plane they soloed.

NATA, ADMA Meet In St. Louis Dec. 5-9

More than 150 exhibits of planes, instruments, flying aids, etc., already booked.

Incomplete preview of what the private flyer may expect to be able to buy post-war in the way of airplanes, instruments, flying aids, propellers, engines, parachutes etc., will be on display at joint conventions of National Aviation Trade Association, and Aviation Distributors and Manufacturers Association, at the Hotel Jefferson, St. Louis, Dec. 5 to 9.

More than 150 exhibits have already been booked at the hotel and arrangements for manufacturers to demonstrate post-war prototype planes at small airports in the St. Louis area have been completed. While a number of post-war models are not far beyond the drawing board stage and others are still under army wraps, it is understood that several manufacturers which have planes now flying expect to use the St. Louis occasion to invert their bids for the post-war private plane market. Connoisseurs of planes specify that the display of planes will not be a public affair, but limited to

distribution agents or dealers, although it is probable that this rule may be relaxed in some circumstances.

OVER 1,000 Expected—Attendance of more than 1,000 is indicated by advance registration.

Speakers at the NATA meetings, at which Col. Roscoe Turner, Indianapolis, president, will preside, will include William A. H. Burden, assistant secretary of commerce; L. Welch Pogue, CAA chairman; J. Carleton Ward, president of Fairchild Airplane and Engine Corp.; Carl J. Fiedler, vice-president of Aerovox Corp.; Thomas H. Beck, publisher of *Collier's*; and others not yet announced. The program arranged by Clarence R. Mooney, convention chairman, leaves mornings free at scheduled events, and will include panel discussions on feeder airlines, private flying, legislative and insurance problems.

ADMA's convention, with President Ray Snyder, Chicago, in charge, will include talks by Joseph T. Grevling, Jr., chairman of the Personal Aircraft Council of the Aeronautical Chapter of Commerce; and Leslie R. Neville, editor of *Aircraft*, on personal aircraft and warlike outlook and discussions of various manufacturing and distribution problems by other

speakers. The program also includes joint meetings of the two groups.

UPMA Formed to Aid In Airmen's Problems

Recently organized group already reported to have membership in 19 states.

The recently formed United Pilots and Mechanics Association, which has offices in the Carly Building in Washington, and membership already extending into 19 states, announces its aims and purposes are to propose adequate regulation for pilots, mechanics and technicians, to obtain a proper understanding of its members' problems within the CAA and CAA, and to make investigations studies and recommendations to CAA, CAB and Congress on civilian flying non-scheduled aviation and public safety.

Officers are: L. Alta Denlow, president; Gerald Fowler, vice-president; V. G. Landrum, secretary-treasurer. Denlow is a member of a Washington law firm, Fowler a former Corps of Engineers employee at Dallas, and Landrum a former employee of the War Department at Dallas and Washington. All three men are regarded as well-experienced in governmental and departmental procedure.

Non-Profit Group—Incorporated as a Delaware non-profit organization, the association seeks to act as a clearing house for the non-commercial and fixed base operation phases of aviation.

Current projects of the association include study of Civil Air Regulations for further simplification and revision, studies for eliminating redundancy and unnecessary administrative red tape, and tabulating membership opinion on various proposals for modifications.

A recent survey was conducted by UPMA on CAA's regulations permitting licensing of pilots with structural physical defects after they demonstrate by satisfactory flight test that their experience, ability and judgment compensate for their disability. The poll showed an overwhelming majority in favor of the regulation.

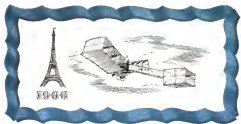
A monthly newsletter with items of particular interest to private pilots, mechanics and fixed base operators, and special news bulletins on emergency matters, are other services of the new group.



SETTING NEW STANDARDS
IN AIR TRANSPORTATION

IN 1926, Sikorsky-Dunne set new world standards by flying 100 miles from London to New York in a single day, setting a height of over 10,000 feet and a speed of 150 m.p.h. without stoppage.

IN 1944, the powerful new Lockheed Constellation set new world standards in air transportation, and is proved to be the largest, fastest, highest flying land mass transport ever built.



The Lockheed Constellation

HERITAGE OF PIONEERS—CHALLENGE TO TOMORROW

Stance-Dumont's gallant achievement was one of many. Year by year, since the turn of the century, longer, faster, higher flights are recorded in the history of aircraft. Today, with the performance of the Lockheed Constellation—setting new world standards in power, range, payload, and safety—the progress of flight has reached a new level. Despite its size, the Constellation easily takes off and lands on the average airport. Economically, it surpasses the smaller transport—whether for over-ocean trips or for flights as short as our loaded mails. It conquers the weather and comes. It is the culmination of forty-one years of aircraft pioneering and a challenge to the designers and builders of tomorrow.

LOCKHEED LEADERSHIP SETS THESE NEW WORLD STANDARDS

*Greatest rate of climb of any transport ★ Longest range of any transport ★ Biggest load-carrying capacity of any transport
Highest cruising altitude of any transport ★ Fastest cruising speed of any transport ★ And these performances make the Constellation the safest of any transport.*





QUESTIONS

Q Will the Constellation be an "expensive" plane to operate?

—W. T., Portsmouth, N. H.

A As the century *Corsairs* such as flight from are bounded to their standard rules it less than that of the transports in service today.

Q Is it true that the Constellation can carry 100 troops?

—George W. E. H., New York

A In its military version the Constellation can carry 100 troops and their equipment.

Q Why does the Constellation have three tails?

—May W., Atlanta

A Big rubber surfaces are needed to control big planes. By distributing the necessary 212 sq. ft. over three equal surfaces, plane is made safer and easier to handle in ordinary-sized hangars.

Q What are the Constellation's dimensions?

—C. W. T., Chicago

A Wing span 123 ft., wing area 1050 sq. ft., length 91 ft., height 25 ft. 8 in., from ground to top of the rudder.

Send us your question. Address: Lockheed Aircraft Corporation, Department 65-51, Burbank, California



FOR NEW WORLD STANDARDS IN AIR TRANSPORTATION

LOOK TO *Lockheed* FOR LEADERSHIP

Automatic Take-Off Recorder Developed

Bell & Howell device consists of two movie cameras, two wind indicators, two control units, and an analyzing projector.

A combination of two motion picture cameras, two wind indicator units, two control units, and an analyzing projector has been developed by Bell & Howell Co. as an automatic aircraft take-off and landing recorder.

This is an improvement on the long-established practice of analyzing take-off and landing characteristics of airplanes by means of motion pictures. The Bell and Howell development is announced by Civil Aeronautics Administration.

Recording Instruments—The new equipment measures accurately the distances traveled by an airplane along its flight path and records its height at exactly uniform time intervals. This gives the speed and the rate of climb.

Normally, where the flight path follows the center line of the runway, only one camera is used. It is located 1,500 feet to the side of the runway, opposite the point where the airplane leaves or re-enters the ground. The camera follows the plane while an electronically controlled shutter exposes the pictures. The motion picture is projected upon a graduated screen, which shows distance and height in terms of time.

Snapshots—In the case of steep climbs, where the camera cannot be precisely located with reference to the aircraft, two cameras are located 1,800 to 3,000 feet apart, but are electronically coordinated so that simultaneous pictures are obtained. A geometric analyzer is then used to project the line of sight from each camera through the imaginary flight path to a point of intersection. The analyzer was developed by W. L. E. Gurley Company of Troy, N. Y.

The photographic record includes pictures taken by a second lens of a small panel of instruments indicating wind velocity and direction, a stop watch, a device for counting frames exposed, and other data in replaceable cards. Direction of camera at each interval is recorded as a picture of an arc marked off in degrees. This permits lateral adjustment of the projector screen so that no distance will be lost properly with respect to the projected image of the airplane.



Take Flight Training: Although he is an officer, R. E. Blythe, vice-president and general manager of Goodyear Aircraft Corp., Akron, is the latest of 17 executives of the company to act as members of the Wingfoot Flyers Club. Left in right, instructor William Rungold, Blythe, and another Goodyear flying executive, Russell de Young, vice-president in charge of production.

Goodyear Executives Learning to Fly

Wingfoot Flyers Club has 29 members, full time instructor, building and three 65 hp. planes.

Typical of the business man flyer's organization which may be found in many companies within the next few years, is the Wingfoot Flyers Club, at Akron, O., composed of executives and key employees of Goodyear Aircraft Corp., who are learning to fly.

Presently the club has 29 members, a full-time instructor and a full time airplane and engine mechanic, with a flight operations building on the edge of Akron airport, and three 65 hp. planes, Piper, Taylorcraft and Luscombe. Ten Goodyear laymen already have won their private licenses and seven others are ready to take their tests. The club plans to add higher horsepower planes for instrument flight training.

"Never Too Late"—Latest to solo, H. E. Blythe, vice-president and general manager, although he is in his 40s, declares "it's never too late to learn." Russell de Young, vice-president in charge of production, and Al Goodling, manager of

plant engineering, have already solved, also. Goodling now holds licenses on five balloons, airship and airplane pilot.

Club roster includes department managers, production men, attorneys and accountants. Admission is passed on by an eight-member committee on basis of applicant's service record with the company, and interest in advancement and aptitude in flying. Flight instructor William Rungold has several thousand hours logged. He was at one time a Goodyear police officer before he became a professional flier.

Chapter Service Unit Of NAA Activated

A chapter service department to provide general and technical aviation information for local units of the National Aeronautics Association has been activated under management of Constance Peterson, who has been an official assistant on the NAA magazine, *National Aeronautics*.

Lawell H. Swenson, manager of NAA, in making the announcement said: "The major interest of almost all of NAA's many chapters throughout the country is the promotion of aviation in their own communities. This means they are concentrating largely on education and improvement of local landing facilities, particularly for private flying."

Four Phases—The new department will provide chapters with information and assistance as part of the national landing facility program of the Association.

The four phases of the service comprise a series of chapter service bulletins, an airport digest, giving monthly reviews of aviation information, an airport consultation service, and a series of chapter and state council organization manuals.

Calif. Port Needs

Ray Hess, San Francisco district CAA airport engineer, recently advised state aviation officials that California would need 175 new airports, and \$55,000,000 worth of structural and improvements to 148 existing airports in the state. San Francisco officials estimate they only need 27 new fields, including five major air terminals, when smaller terminals and 45 airports for personal planes and flight instruction.

Plane Auction Prices Studied by Officials

Sales method at Patterson Field examined with new interest as result of fantastic figures paid for wrecked and non-flyable aircraft.

Surplus plane officials are pondering results of an auction held at Patterson Field in which virtually fantastic prices were paid for wrecked, engineless and non-flyable planes. As a result, the auction sales method is being studied with somewhat new interest because of the wide attention attracted by the sale.

The planes were offered at auction because they were considered suitable only for salvage or scrap. All 163 planes—most of them of planes—offered were sold, as experienced bidders quickly dropped out of the bidding when prices became prohibitive.

\$39,999 for Wrecked Lockheed.—One Lockheed AT-17 that had been crash-landed and had only one of its two engines brought \$39,999 and it was estimated that it could not be placed in flyable condition for less than \$40,000.

A Piper Crusier with an engine that is unusable brought \$1,300. All told, the average price paid was listed at \$913, the planes ranging from two-engine Beechcrafts, Expeditors, Aeromacs and gliders, one of which, a Letter-Kestrel trainer, sold for \$755.

It is understood that a similar pile of salvage planes has been assembled at Warner Robins Field, near Macon, Ga., and possibly the sale will be repeated there to determine whether or not the Patterson Field results were freakish, or whether movement of equipment and prices obtained will give the auction method an advantage over the present system used for planes in good condition. These new are sold on a bid basis, prices and interest repeatedly dropping, particularly on heavier trainers.

Auction Method Favored.—The Harvord surplus aircraft report suggested that a simplified auction method might have advantages over the sealed bid basis, and it is not inconceivable that further experience with the auction system will dictate changes in present procedure.

Even though prices and interest are dropping in connection with trainers, no preliminary rumors probably will be felt by the surplus Property Board, since the



COAST DEFENSE ZONE:

Stk closed to personal aircraft operations, with trusted exceptions, and to civilian schools in the Western Defense Zone. Map shows boundaries of the restricted zone. Charter operators and personal plane owners should consult Army authorities or CAA before attempting flights into the region. May Gen. Charles M. Busseneel, commanding general, Western Defense Command, believes it will be possible soon either to modify civilian flight restrictions in the area or move the boundary line westward to the point where it will cover only a minimum number of areas vital to defense and war operations.

Pope Surplus Advisory Subcommittee recommended that planes not readily sold be held in an adequate storage pool for transfer to schools and other institutions in a post-war pilot training program, which is almost sure to come as a part of the post-war federal works program. They would be held three years under the Pope program. On the other side of the picture, however, there undoubtedly will be far more sellable planes than can be absorbed in such a program, and three probably will be disposed of in the private market to gener-

ate increasing interest in personal plane flying.

Planes Non-Flyable.—One very bad feature of the Patterson Field auction is that the planes offered were non-flyable in their condition when auctioned, and it is probable that many buyers will find the cost of reconditioning more than the cost of a new plane of the same type, or one bought under sealed bid. Aviation people feel that the sale of planes in a category such as this should be restricted to their use as salvage or scrap.

Flying Leathernecks Brilliant War Book

Story of U. S. Marine Corps Aviation's role in Pacific War, as told by two combat correspondents.

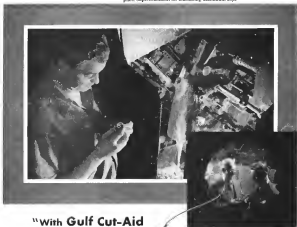
The story of Marine Corps aviation is told in a new book, *Flying Leathernecks*, released by Doubleday, Doran and Co., Inc. The volume is outstanding in a war in which brilliant writing has been the rule rather than the exception, and its two combat correspondent authors—Captains Richard G. Hubler and John A. DeChant—have learned to weave the dry string of history into a colorful story of human life and valor.

After Navy carrier pilots had cleared a path, and ground Marines had been put ashore to seize airfields, the *Flying Leathernecks* came in to hold the skies, to ward off counterattack and spearhead the other half of their team in securing other bases from which new strikes could be prepared.

Wake Island.—The book opens with the capture of Wake Island, where the Marine garrison wrote the first new chapter of the Corps and where four Marine F4F Wildcats set the pattern for a war yet to be fought. There is the defense of Midway, where the Marine fighter squadron consisted of 21 Brewster F2A Buffalos and seven Wildcats. The Brewsters were strung dacks for the Zeros, could hardly keep up with Shugan, and drove bombers. After the first day only one Buffalo and one Wildcat, three SB2C's and eight SB2D's of the other Marine squadron were flyable. But by that time the carriers were attacking the base.

Then came the attack on Guadalcanal when Marine air squadrons shifted to the offensive. When it was done, the Japs were definitely started on their long trail home.

The big history of modern screw machines in this plant produces several different types of aluminum spray parts with the help of Gulf Cut-Aid. In the lower photo a Gulf Service Engineer (right) is shown consulting with the plant Superintendent on installing aluminum pipe.



"With Gulf Cut-Aid

we increased aluminum cap production 25%

—tool life over 100%"

says this Superintendent

GULF CUT-AID does a better job on aluminum than any other cutting fluid we've ever used," says this Superintendent. "With this outstanding new cutting oil we stepped up production of aluminum caps 25%, increased tool life well over 100%, and are getting better results."

Gulf Cut-Aid consistently shows better results in cutting aluminum and other nonferrous metals!

In addition to its superior performance on this class of work, Gulf Cut-Aid has another

important function—it's an effective energizer for other cutting oils, regardless of type or viscosity. When blended in the proper proportion with other cutting oils, depending upon job requirements, the use of Gulf Cut-Aid makes possible higher production speeds and results in improved finish, longer tool life, or both.

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FACE THE INVASION • BUY U.S. WAR BONDS

COMMENTARY

Second Battle of Philippine Sea Climaxes Year of Carrier Triumphs

Next naval air blow likely to be large scale action on part of Fifth Fleet, striking from West-Central Pacific and much nearer to Japan than the Philippines.

Conversion of the vast Pacific into an Allied lake within the space of one year is the almost unbelievable achievement of U. S. naval air-ops. The year, beginning with the Gilberts operation (Nov. 18-20, 1943), has witnessed not only a tremendous increase in the number of carriers, growth of carrier task groups, improved models of carrier-based aircraft and perfection of new techniques, but also the development of new tactics resulting in concentrating greater striking power against targets on land and sea. Air-sea rescue methods have been improved, and night fighter operations made more effective. Broader concepts of strategic missions, and new methods of co-operating in potential teaming with battleships, cruisers and destroyers, and in support of amphibious operations have emerged.

It is more than probable that as far as action against an enemy fleet is concerned the crushing victory of the Philippine Sea was the zenith. However, with the sea virtually swept clear of enemy naval power for at least months to come, the imagination is staggered at the possibilities which lie ahead for carrier-based aviation in the task of occupying Laos, Formosa, the Ryukyus, Bougainville, ports on the China coast, and in action against Japan herself.

Gilberts.—In September, 1943, a small but powerful task force consisting of new and remodeled battleships, of cruisers and destroyers, of three new carriers, together with the necessary tankers and supply ships, sailed out against Marcus Island, only 1,600 miles from Japan. Aircraft from the two fast attack carriers (CVAs of 17,000 tons) and one of the cruiser-converted Independence light-carrier class (CVL, 10,000 tons) reduced the entire enemy base to a sham-

ble for the second time since Pearl Harbor. It was the first battle action of the notably successful Grumman Hellcat fighters (F6F). A couple of weeks later another task force with three new carriers struck Tarawa and Makin in the Gilberts. Early in October a larger force of six carriers (3 CVAs and 3 CVLs) smashed up Wake Island.

Marshall and Carolines.—The big Kwajalein operation in the Marshalls from Jan. 30 to Feb. 23 revealed several striking features. An important preliminary part was played by the advance units of the Seventh Air Force which jumped to Tarawa in the Gilberts as soon as bases were made suitable for long-range Liberators, hard-hitting Mitchells and Navy Ventura. For two solid weeks before the landings on Kwajalein and Raa these land-based bombers smashed the heavily defended enemy positions in the eastern Marshalls, including Mili, Jaluit, Wotje and Taka. This neutralized the Japs' "unsinkable carriers" and enabled our fast carrier task force to move in and do an outstanding job, supported by a larger measure of highly effective surface gunfire than had hitherto been used in these treacherous operations. Another striking feature was the length of time over which the intensive carrier effort was maintained, a feather in the cap of the well organized supply train of the carrier Task Force and an indication of the prime importance of air superiority in this type of operation. Without it the entire force in the Kwajalein lagoon could have been dealt a crippling blow.

Truk and Saipan.—Another indication of the coming age of carrier aviation was the heavy blow at Truk (more than 1,000 sorties, over 200 planes destroyed, widespread damage to enemy in-

stallations) with the left hand (nine carriers) while the main task force was still engaged in the Marshalls, the very time when our amphibious forces were landing on Eniwetok, which was to become a key to our Central Pacific operations for months to come. Leaving "unrepentant" Truk in a panic, two of the carrier task groups amazed the world by cockily proceeding 700 miles further into enemy waters, and attacking Saipan, central base of the all-important Mariana.

Western Carolines, New Guinea.—The next two months brought conclusive proof that virtual control of the Pacific had passed to the United States, based almost wholly on carrier air supremacy. Mar. 30 to Apr. 1 saw a highly concentrated series of attacks on Palau, Yap and Wotani in the western Carolines, over 2,000 sorties in three days.

During the last week of April a very large Carrier Task Force of CVs, CVLs and CVEs co-operated in the MacArthur-Kennedy leapfrog operation which captured Hollandia, in Dutch New Guinea. This was the last from which stripping attacks were aimed during the summer, and from which the invasion of the Central Philippines was launched.

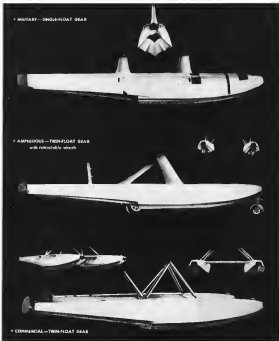
Mariana and Philippine Sea.—The next great powerhouse blow was the extended Mariana operation from June 18 to July 4, including the First Battle of the Philippine Sea. It was a complex action, involving all types of carrier-based aircraft missions totaling thousands of sorties per week, extending over an immense area. Possession of air and naval bases on Saipan, Peleliu and Guam will undoubtedly be a key to the Pacific victory.

Disaster in Philippine Waters.—The Marianas was Admiral Spruance's show (3rd Fleet), a powerful blow with the right. October brought Admiral Halsey his chance, a staggering sock with the left, the final results of which are even yet not in, as Admiral Mitscher's carrier planes scouted by General Kenney's bombers from Morotai and General Chennault's from China, continue the chase and the search for crippled remnants of the enemy fleet. The next big naval air blow may be another coming right from the Fifth Fleet, much nearer Japan than the relatively distant Philippines. Keep a weather-eye on the West-Central Pacific.

—NAVIGATOR

EDO FLOAT GEAR

All-metal seaplane floats for every type of aircraft



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Contractors to the U.S. Navy and U.S. Army Air Forces and Allied Governments

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PERSONNEL

William S. Moore (photo), whose return to the CAA



as chief of General Inspection Division was announced in *Airport News*, Nov. 6, will have as his assistant **Paul E. Young**, who has been acting chief of the division. Moore has been in the Flight Control Commission of the Army Air Forces for the past two years. He was chief of the General Inspection branch of the seventh region when he was called to active duty. He has been with General Inspection at CAA since 1939.

Emerson D. Lapley (photo) has been named manufacturing manager of Bell Aircraft Corp.'s



Glenn County Division in Dayton, Ohio. For the past two years he has been factory manager of the Niagara Frontier Division. **Joseph J. Buckland**, who was Lapley's assistant, has been named acting factory manager of the Buffalo plant. Lapley formerly was employed at Consolidated, Cessna-Wright and Bell Aircraft.

Stanley Bell, former chief engineer of Hughes Aircraft Co., Culver City, Calif., has resigned after ten years' service. Bell holds one of the longest service records of any Hughes executive. He was with Vought Aircraft in 1934 when he was granted a



WINGS CLUB GUESTS:

Brig Gen William E. Offshore (ret'd.) and Gen. Henry R. Arnold were greeted by J. Carroll Cose at a recent luncheon in Washington sponsored by the Wings Club of New York. Cose is president of the club and General Arnold was guest speaker.

leave of absence to work on the Hughes Race and resumed with Hughes' company. In 1939 he installed design studies on a super-performance military airplane.

Frederick John Knack, well known aeronautical engineer and designer,



has been named vice-president in charge of engineering of Lancaster Aircraft Corp., Trenton, N. J. Knack resigned recently from the Fairchild Aircraft Division of Fairchild Engine and Aircraft Corp., where he worked with production of the AT-21 and later was engineer in charge of that company's engineering office in New York. Following graduation from New York University's Daniel Guggenheim School of Aeronautics, he became an instructor in aeronautical engineering. Knack was chief engineer of the Moose Aircraft Corp., which produced the Hasegawa. In addition, his experience includes positions with General Aircraft Corp., later known as North American Aviation, and Douglas Aircraft Co. He is an associate fellow of the Institute of the Aeronautical Sciences.

Peter Altman, for many years head of the Aeronautics Department of the University of



Detroit, and at present an engineering consultant in Detroit, has been named a consulting engineer with the Glenn County Division of Bell Aircraft Corp., in Middlebury, Ohio. Altman, active in many engineering societies, has been vice-president in charge of aircraft engineering for the Society of Automotive Engineers. He was a consulting engineer for Stinson Aircraft Corp., on the Model R, the Harvard series and the 535 and C-47 Army observation airplane. Before he opened his own office, Altman was director of the manufacturing research department for Vought Aircraft, Inc.

Aero Insurance Underwriters announce the following promotions and staff additions: **Harold Norman**, coordinator in the home office, has been appointed to succeed **John K. Gaudette** as manager of the Kansas City office. Gaudette became co-

MARINE CORRESPONDENT:

Burt (Bud) Lettin, who was honorably discharged from the Marine Corps, as back as 1918, was a Marine combat correspondent. Lettin was formerly in the publications section of the Publications and Statistics Division of the Civil Aeronautics Administration. He is a member of the *American Writer's Association*.

general manager for that territory since was with CAA in the Middle West area before he joined **John Croft Bessinger**, formerly assistant manager of the Kansas City office, replaces **Monter** in New York. **Jack H. Quick** became assistant manager at Kansas City. **Reggie Reese**, with the insurance purchasing department of **Stouffer Aviation**, has been named field underwriter in the Atlantic office.

Scott Russell, general manager of Aeronautical Clinician of Chattanooga, was married to **Miss Christine Reed Kennedy**, who has been secretary to Senator Walter F. George of Georgia for the past eight years. The marriage took place in the Mount Vernon Methodist Church and the couple will live at the Washington Park Hotel in Washington.

Commander W. E. Larned, USN, who was United Air Lines pilot on military leave, has received a



letter of commendation for meritorious service from Navy Secretary Foran. He is now chief staff officer of the Naval Air Transport Service, Atlantic and received the letter for planning flight operations details adopted throughout the service. Before joining the Navy he was superintendent of custom flight operations for United at Chicago.

EASIER, FASTER, LOWER-COST TOOLING WITH FIBERGLAS[®]-REINFORCED PLASTICS

The combination of Fiberglas and specially developed, low-pressure resins has resulted in a material with many unique and practically important characteristics. Lightness, rigidity, dimensional stability, high impact strength and ease of fabrication are among the advantages particularly significant in the production of Fiberglass-reinforced plastic dies, jigs and fixtures.

The high cost of manufacturing metal dies is eliminated. Costly, time-consuming machining is avoided.

FABRICATING FIBERGLAS-REINFORCED PLASTICS

One of the techniques developed by Douglas Aircraft engineers, for the fabrication of Fiberglass-reinforced plastic jigs is illustrated at the right:

No. 1. The male mold (or, if available, the actual part), heated with plates of Perm, is placed on a corrugated metal table equipped with air valves for producing vacuum.

No. 2. The female block is covered with cellophane to prevent resin from sticking to the mold. Then the Fiberglas cloth laminate is tensioned to fit the form block. The low pressure resin is pulled into the cloth and the desired number of layers are built upon the form block.

No. 3. A rubber blanket is stretched over the mold.

No. 4. Air is evacuated. As the pressure is increased resin men and air pockets are squeezed out of the laminate. The side is then rolled into the oven to complete polymerization of the resin at about 100° F.

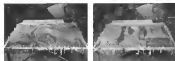
No. 5. After curing and cooling, the form block is removed, fingers are trimmed, holes drilled, changes retouched to complete the tool.

All available fabricating data and additional information about Fiberglas products and Fiberglass-reinforced plastic will be furnished on request. Write: *Dow-Corning Fiberglas Corporation, 1952 Rochester Road, Toledo 1, Ohio*. In Canada, *Fiberglas Canada Ltd., Ontario, Ontario*.



FIBERGLAS...A BASIC MATERIAL

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Shown is the production of a jig for semi-rigid plastic dies using Fiberglas-reinforced plastic. The material is strong and is non-corrosive to electricity.

Photo courtesy: Douglas Aircraft Co., Inc.



Dr. A. R. Lombard, Jr., special assistant to the director of the Aircraft Resources Control Office, and chief of the manpower division, has resigned. Dr. Lombard was with the Aircraft Production Division of War Production Board before the formation of ARCO. He has made numerous trips throughout the industry assisting in manpower problems. Before joining the government, Dr. Lombard was assistant professor of aeronautics and mechanical engineering at the California Institute of Technology. He has made an assessment about his future plans.



Albert Borg has joined Aircraft Parts Development Corp., Summit, N. J., as industrial design engineer and stylist. He will work in conjunction with the corporation's activity in product engineering, research, and development.

Walter A. Bovee has joined the staff of Walter Dornier in Tropic, New York City, industrial designer, as an associate in industrial planning and consultant on sales problems of clients. Bovee has been advertising and sales promotion manager of Carter Corp., Brentwood, N. Y.

Carl B. Spies, vice-president in charge of sales and service of the Lockheed Aircraft Corp., is confined to the Good Samaritan Hospital in Los Angeles, suffering from a compound fracture of the right leg. He was injured on a ranch near Williams, Ariz., while vacationing.



TWO 20-YEAR PINS:

Paul Amarger (left), general superintendent of Hamilton Standard Propellers, division of United Aircraft Corp., East Hartford, and **Albert F. Monville** (right), assistant superintendent, married 28 years service pins from Sidney A. Stewart (center), general manager. Stewart recently received a 15 years' service pin. All three were worked at the Standard Steel Presser Co., in Pittsburgh, before it became a part of United.

30 YEARS' SERVICE:

Preston R. Banett, vice-president and general manager of Sperry Gyroscope Co., was given a day's leave to mark the completion of 30 years with Sperry. **Reginald E. Gelfand**, president, made the presentation. Banett holds 21 patents outright and nine jointly. He directed development of airborne gyroscopes, the Sperry gyro-horizon and directional gyro, the Sperry Gyrocompass for automatic flying and the technique of sound-proofing planes.

G. Geoffrey Smith, editorial director of *Flight* and *Aircraft Production*, both British journals, who has been on loan to the British Ministry of Production in this country, will return to England late this month. He has been in this country directed as an interchange of technical press information. Smith is oversteering his six months by several weeks to complete an extensive speaking tour. While here he has arranged for return visits by several American technical journalists. An American edition of his book, "The Production of Aircraft," will be released shortly with a foreword by T. F. Wright, Chief Aeronautics Administrator.

Edward E. Shattley, Jr., press chief of the Civil Aeronautics Board, is recovering from an operation at Emergency Hospital in Washington. He is expected to be hospitalized for several more weeks.

Two appointments to editorial positions on the McGraw-Hill Publishing Co. aviation magazine have been announced by **George W. Fied**, publisher. **Reginald Miller** returns as associate editor of *Air Transport* and is the technical staff of *Airways*. Bovee followed a leave of absence from Aircraft, where he was managing editor, to serve as research supervisor at the War Metallurgy Committee of the National Defense Research Committee. **Oscar Ludwig**,

formerly associate of *Air Transport*, has been named managing editor.

Jack Black has been appointed chief operations agent for Continental Air Lines in Kansas City, replacing **Kenneth Haglund**, who has been transferred to San Antonio. **Jerry Kitchin** has been named supervisor of passenger service for Denver in place of **Bever Gish**, who has been appointed to a new position in the operations of Continental.

Fleetings, division of Kaiser Cargo, Inc., announces **W. A. Hollingdale** as production manager, replacing **Wm. Housley**, resigned. **Tom Curran** becomes shop production manager and **Jack Koman**, experimental production manager.

Robert M. Staskey has been named chief engineer of the Niagara Power Division of Electric Corp., Buffalo. He was the first man to fly the Autocycle, first jet-propelled airplane before joining Bell in



Woodman Staskey Staskey

1936, Staskey was employed by Douglas and Vought-Sikorsky. He has been chief test pilot and manager of Bell's flight research department. **John F. Woodman**, former Army aviator, has been named assistant chief engineer of the division. He has been with Consolidated and Curtiss-Wright. **Jack Woodman** has been named chief test pilot. Woodman was senior experimental pilot and assistant chief test pilot for Bell.

Vaughn G. McIlhenny has been appointed to the technical staff of the Aeronautical Division of Commerce of America. Before accepting his new post, McIlhenny was with the Army Air Transport Command as a civilian engineer, coordinating engineering activities among ATC engineers, Wright Field and the aircraft manufacturers. Prior to that he was an aerodynamics engineer in the international division of Transcontinental and Western Air, Inc., and also was with Beech Aircraft Corp.

G. T. Redley, 56, superintendent of southern flight operations for American Airlines, died at Marietta, Ga. Redley started as a housepainter in 1903 as assistant general manager for Interstate Airlines at Marietta, Ga. He was active in the planning and development of the Navy Transport program at Ft. Worth,



Light Landings for TREMENDOUS TONNAGE

Handling 11,500 miles in 84 hours, Pan American World Airways' "Cascadilla" express rushes "hot" priority cargo to the coast. The thundering planes sweep down by the Amazon, across the Atlantic to the Gold Coast, land again by the Nile, drop onto Arabian sands, and complete their flight in India. At each hurried stop, Aerols' snail up loading docks, help the plane come in safely, and protect vital cargo. Thus, Aerols contribute substantially to the success of the fastest express service in history.

THE CLEVELAND PNEUMATIC TOOL CO.

PIONEER FOR 45 YEARS
AIRCRAFT DIVISION • CLEVELAND, A, OHIO
The mechanics of these pneumatic tools, the Aerols, operate in minutes and Cleveland took pride in making and maintaining

Speed Flyers! Buy MORE War Bonds and Stamps

Aviation Officials' Transactions In Own Securities Reported

Dealings in September reveal general trend toward reduction of holdings, according to data submitted to SEC.

September security transactions by aviation officials reported to the Securities and Exchange Commission were relatively few, with the most important changes taking place in the manufacturers' section.

Lawrence D. Bell, president of Bell Aircraft Corp., sold 3,566 shares of the company's common, leaving him a balance of 12,000 shares at the close of September.

Grumman—B. Allison Gillies, vice-president of Grumman Aircraft Engineering Corp., liquidated his entire holdings of the company's common, consisting of 1,650 shares. Leon A. Swirell, executive vice-president, sold 3,000 shares and gave away 866 shares, leaving his ownership at 24,196 shares. Leroy B. Grumman, president and principal stockholder of the company, gave away 1,406 shares. His holdings at the end of the month comprised 73,713 shares.

Republic—John J. Daly, director of Republic Aviation Corp., bought 1,940 common, increasing his holdings to 55,814 shares. In August, Frederic G. Cohen, a director, sold 200 common, representing his entire holdings of the company's common stock.

Consolidated—David G. Fleet, director of Consolidated Vultee Aircraft Corp., sold 266 common during September, leaving him an ownership of 3,194 shares at the end of the month. He also owned 30 of the \$1.25 cumulative preferred. Isaac M. Laddin, executive vice-president, reported the purchase of 4,920 common by his wife, which increased her holdings to 4,344 shares. Mr. Laddin holds 4,124 common, while a trust holds 1,669 shares. Charles T. Leigh, vice-president, sold 4,484 shares common in August, reducing his holdings to 1,900 shares.

Pan American—El Preston Morris, secretary and general attorney of Pan American World Airways System, sold 184 shares of the company's capital stock in Sep-

tember, leaving him a balance of 600 shares.

American Export—J. M. Hancock, director of American Export Airlines Inc. and a direct owner of 7,730 shares of the company's capital stock, reported Lehman Brothers made a distribution of 242 capital shares during September. The firm's balance at the close of the month was 21,912 shares. John E. Rorer, executive vice-president, reported sale of 26 shares of American Export's capital stock in August, making his balance 5,000 shares.

FCA—Raymond G. Lochiel, treasurer of Pan American Central Airlines Corp., reported purchase last July of 18 shares of common, increasing his ownership to 318 shares. George H. Elson, director, reported receipt of 3,161 shares in July as a liquidating dividend from Pittsburgh Aviation Industries, Inc. At the close of that month he had 11,332 shares. John W. Donakowski, also a director, increased his holdings to 1,500 shares through purchase of 300 shares in August.

Among other transactions in August were sale of 1,300 shares of Northeast Airlines common by Samuel J. Seldman, director, leaving him a balance of 15,666 shares; purchase of 1,200 shares of Colonial Airlines common by Frances Hartley, Jr., director, giving him 7,666 common; sale of 368 shares of United Air Lines common by Sumner Sewall, director, leaving him an ownership of 7,000 shares.

Financial Reports

Northrop Aircraft reports net profit of \$493,314 for its fiscal year ended July 31 after losses and charges equal to \$1.16 a share in the Class A and Class B stock outstanding, compared with net income equal to \$2 a share in the preceding fiscal year. Net profits on sales were lowest since 1941. Sales totaled \$66,045,949 against

\$66,791,945 in the previous year. Estimated post-war refund of income profit taxes for the 1944 year was \$382,445, equal to about \$1.48 a share.

Aviation Corp. Nets \$3,199,871 in 9 Mos.

Equals 55 cents a share against 49 cents a share for like 1943 period; earnings and dividend active of other companies reported.

Aviation Corp. reports net income of \$3,199,871 for the nine months ended with August after all charges including federal taxes, equal to 55 cents each on 5,780,313 shares, and compared with \$2,810,488 or 49 cents a share for the same period a year ago.

Net sales for the nine months are listed at \$69,338,547 compared with \$57,204,566 a year ago, the decline of \$12,133,981 reflecting price reductions as well as lower demand for some war material.

Other Income Not Included—The consolidated earnings do not include the corporation's equity in undistributed earnings of unconsolidated companies that are not consolidated. These include Consolidated Vultee Aircraft, New York Shipbuilding Corp. and American Central Manufacturing Corp. The corporation also has investments in American Airlines, Pan-American Airways and Roosevelt Field.

Other financial reports include: **Ryan Aeronautical Co.**, and wholly owned subsidiaries for six months ended Apr. 30, last, reported earnings of \$346,151 compared with \$397,213 in the full fiscal year ended Oct. 31, 1943. Revenue from manufacturing operations for the first half of the 1944 fiscal year was \$18,378,427, closely approaching the \$18,708,254 gross for the prior 12 months. Subsidary operations for the six months ended Apr. 30 were \$2,766,532 as compared with \$3,823,953 for the year ended Oct. 31, 1943.

T. Claude Ryan, president, reports agreements reached with the Price Adjustment Board concerning renegotiation of profits of the company and subsidiaries for the fiscal year ended Oct. 31, 1943. Amounts to be refunded later approximately \$300,000 which, after costs for applicable federal taxes, results in net refund of approximately \$73,000 which will be charged to the reserve for contingencies provided for this and other purposes in the 1943 fiscal year.



Keep Buying Bonds—
The More You Buy,
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'Chutes Revolutionize Warfare!

The birth of the world's air war, page in the history of warfare, is being written by America's paratroopers. We pay tribute to these gallant men! They have profoundly changed military strategy.

EAGLE WINGS CLUB

Anyone who has made an interesting acquaintance with the Paratrooper is eligible for the Eagle Wings Club in the Army. When Club card will be given to the paratrooper. When issuance of this organization. Write us if you are qualified.

Perfect Eagle Parachute, fabricated by our expert craftsmen, has combined superiority in the lightest weight parachute in our Army and Navy. This sure performer and safe accessory for military parachute operations may be used in the technique of advanced parachute operations and aerial work in the air. Eagles are made in all sizes and are available for competitive development of parachute production. Your inquiries are invited for immediate attention.

E. J. Follmer
President

Eagle Parachute
CORPORATION
LANCASTER, PENNA.





(Upper photo) Bikes are Borneo's only highway to the interior. An advance 20 weeks' time journey required only 30 minutes in a beachcraft.

(Lower photo) Beachcraft fast-equipped before flown by machine over other landing on a mountain stream in the Borneo interior. Photographs courtesy Rev. George E. Felt (left), N.Y., and Christian Missionary Alliance, New York City.

King of the Apo Kajan tribe of Borneo is Oejong Iejou. The Japanese have invaded his land. But he and his people have not forgotten the white men who come to help them, before the war. They remember well the missionaries who regularly flew in a beachcraft over their mountainous jungles and landed on their narrow, swift-flowing rivers, to heal their sick and enlighten their kinsmen. They know that the liberating wings of the white men's aircraft have purged other lands of the Pacific from the treacherous invaders. They know that their land, too, will again be free. King Iejou and his people look to the skies and say with sure knowledge: "They will return."

Beech Aircraft

CORPORATION



BEECHCRAFT ARE DOING THEIR PART WICHITA, KANSAS, U.S.A.

PRODUCTION

Navy Expected to Extend Use Of Incentive Contracts on Planes

Only four for aircraft, totaling \$1,508,000,000, have been completed but saving of \$208,000,000 and receipt of \$37,000,000 extra profits by companies make wider employment of system likely.

Increased interest is being shown by the Navy Department in so-called incentive contracts and it is considered likely the department will extend the use of such contracts in future dealing with aircraft manufacturers and others producing for the Navy.

To date, only four aircraft contracts utilizing the incentive system have been let and completed. These contracts totaled \$1,348,000,000. On these contracts the government saved \$208,000,000 and the aircraft companies involved, which the Navy declined to name, received \$37,000,000 in additional profit.

Completion — An appraisal of

these contracts has resulted in a generally favorable impression and an expression from some executives that the incentive-type contract is better than cost-plus-fixed-fee and also better than fixed price contract under war-time conditions in that financial risks present in other types are more nearly eliminated.

The contracts do not open wide the field which exists in the cost-plus contracts and under these the contractor not only has an obligation to keep costs within a certain specified range, but has an incentive for additional profits by so doing.

Extra Charges — Under the in-

centive contract plan the Navy and contractor agree on the basic cost of an item plus 10 percent profit. For example, with the basic cost at \$100, the cost plus ordinary profit would be \$110. The contractor is then given additional latitude for unforeseen expenses which might raise the total, for example to \$130. With completion of the contract, the contractor would have to report any costs between \$110 and \$130, the top price he would receive for the item. He could receive \$130, but no more and if the cost was \$129 his profit would be only one dollar.

On the other hand, if production costs were reduced to say \$95, the contractor would receive not only the original profit agreed upon, but in addition a percentage of the difference between \$110 and \$95, with consequent saving to the government.

With basic costs agreed upon before hand, many controversial details which require extended negotiation and delay settlement under other types of contracts are eliminated, according to Navy officials, who would like to extend the use of such contracts to virtually all manufacturers dealing with them wherever feasible.



ASSEMBLY OF BOEING'S B-29 SUPERFORTRESS:

This exploded view of a B-29 taken at Boeing's Wichita Division illustrates the company's multi-line system of production in which major units of the bomber are brought together in the final assembly stage, each pre-completed, including installation of electrical apparatus, wiring, tubing, instruments, upholstery, etc. This makes final assembly a matter of joining and connecting.



CANADIAN-BUILT CATALINA IN PRODUCTION; shows a PBY

Plano notes in plant of Canadian Vickers, Ltd., Montreal, shows a PBY Catalina hull receiving the wings and power plant. Production contract of Catalina flying boats is now being completed at both Canadian Vickers and Boeing Aircraft of Canada, Vancouver.

Cost of Air Power Minimized by Result

Arnold's report of 42,000 planes lost in stunning aerial destruction declared not high in view of damage inflicted on enemy.

Report of Gen. H. H. Arnold that 42,000 airplanes have been lost in gaining and maintaining our aerial supremacy made many laymen flustered but it was only because they had not examined the aircraft production figures since Pearl Harbor.

General Arnold's report noted that 17,548 of these airplanes had been lost in the United States but that our air force had dropped a total of 1,649,000 tons of bombs on the enemy to balance oil against the east.

► September Output—It is notable that the aircraft industry produced an estimated 7,995 airplanes last month, 8,274 in August and 8,090 in July or about 35,000 in the last three months. The total airplane production of the industry up to the end of September of this year amounts to 65,202 airplanes. That means the industry has produced more airplanes in the first nine

months of this year than have been lost by the Army Air Forces since Pearl Harbor.

To put up this, here is a review of aircraft unit production as carried previously by AVIATION NEWS: January, 8,189, February, 8,740, March, 9,137, April, 9,343; May, 8,962, June, 8,949, July, 8,090, August, 8,274 and September, 7,995.

► Leaking GO—Production in units now well level off at approximately 7,268 with increased weight of aircraft produced, the only true yardstick, due to the emphasis on heavy bombers and now and still secret effort in the offing.

Another evidence shows General Arnold's figures are not out of line. For example, the 1944 monthly production rate, despite the fact that output is not up to schedules of several months ago, will give a 1944 total approaching 166,000. Production for 1940 was about 9,000, for 1941 about 32,000, for 1942 about 50,000 and for 1943 around 100,000.

► 454,000 Series in 9 Months—These figures, however, are more impressive when compared with General Arnold's statement that, since December, 1941, AAF airplanes have engaged in 1,250,000

sorties against the enemy. The way the striking power of the AAF has built up is brought out by the fact that 71 percent or 958,000 of these sorties took place in the first nine months of 1944, compared with 383,000 in 1943 and 27,000 in 1942 plus Dec. 1941.

General Arnold computed the handful of AAF sorties available at Pearl Harbor with the 10,540 sorties flown by combat airplanes on June 6 of this year or the 1,271 heavy bombers, supported by 489 fighters, which in one attack poured 2,700 tons of bombs on Marsh.

Fairchild Forwarder Production Halted

Production has ended on the Fairchild UC-63K Forwarder, a four-place utility-cargo plane which has performed yeoman service in Australia, Africa, India, Britain and Brazil in transporting ammunition, medical supplies and personnel.

The last Forwarder was rolled out of the Hagerman plant, test flown and turned over to AAF Resident Representative Maj. J. T. Jennings by Dick Herman, chief test pilot. The first Forwarder was produced in September, 1942, as a modification of the widely used Fairchild F-24, private plane, originally designed in 1933.

► Modification—The Forwarder was modified several times during manufacture. It was first powered by a 145 hp radial engine, followed by the installation of a 185 hp radial engine April of this year, the production Forwarder has been powered by the 200 hp in-line Ranger engine, giving it a top speed of about 135 mph. Its cruising cruising range is 500 miles.

Sutton Quits Convair

Resignation of Harry S. Sutton, director of engineering for Consolidated Vultee, was announced following a reorganization of engineering activities of the corporation.

Activities formerly under Sutton's direction, including design research and development will be consolidated under I. M. Laddies, executive vice-president, with administrative activities of the engineering and flight research departments coming under the direction of B. W. Skramen, engineering manager.

Output of Urgently Needed Planes Lags

October total of aircraft in general is on schedule but production of certain types is reported off sharply.

While total production of aircraft in October—1,429 aircraft (AVIATION NEWS, Nov. 4) registered on schedule performance from the standpoint of overall numbers, production of certain urgently needed types was sharply below schedule.

The situation was such that WTB Chairman J. A. Krug made the comment that some manufacturers exceeded their schedule by such a margin as to make up the deficit caused by other plants, not made which "fell down badly."

► Most Needed Types—Unfortunately, he pointed out, the models

on which production was below schedule were of the most needed type, while the majority of the over schedule performance group involved less-needed aircraft. Production was not up to schedule in the big bomber class and heavy transport, as was the case in certain new improved models in other classes which are being brought into production. In terms of aircraft weight accepted, production for the month stood at 75,000,000 pounds, exclusive of spares, somewhat under the average of recent months.

Heavy plane output compares with a September total of 7,588 with an airframe weight of 56,000,000 pounds, including spare parts.

► Production Generally Satisfactory—Production was reported generally satisfactory in Army standard heavy bombers, carrier-based fighters, most transports and the trainer and miscellaneous models.

The slowing for the month was tempered by the fact that current aircraft schedules already have been cut, as recently announced, to represent other minimum military requirements on, in cases where that is obviously unattainable. The manufacturers' maximum estimated production. Hence, any below-schedule output on a particular model is bound to hamper planned military operations.

GE Device Controls Engine Temperature

A temperature control device which electrically governs proper cooling of engine head, oil and carburetor air at constant temperatures for fighter planes, announced by General Electric Co., is expected to make the fighter pilot's job easier, by its automatic functioning.

Secret of the new device is a temperature-sensitive material, a combination of metallic oxides, which reacts through an electrical system to open the flaps controlling flow of air to the engine, as predetermined temperature is determined. When temperature is reached, flaps will be fully open. A delicate relay of only 0.0006 watt in power, causes the control to snap the flaps at any position between open and closed, as indicated by engine temperature.

► Wind Resistance Cut—The control makes sure that the flaps are never open wider than is required by the temperature, thus reducing wind resistance created by the

flaps expanding into the airstream to a minimum consistent with proper cooling, and increasing the speed of the plane. The device also lengthens engine life by preventing overheating from overheating.

Most other temperature control systems require the pilot to watch his temperature gauge and put the system in operation manually by working a switch on his control panel. The new system can be placed in any part of the plane where space is available. It has been completed after several years

25 POSITIONS Start NOW—Continue POST-WAR!

The U. S. Navy has over 20,000 men with an engineering or electrical background in 1944. As soon after this as the Navy program to keep about 15,000 men and women in the service after the war has been working out, the Navy will have a shortage of 5,000 men and women in the service after the war. This is a shortage, an opportunity for qualified men and women to get into the service with an organization of the highest standing in the Engineering and Manufacturing Field.

We are able to offer immediately at highest rates, on a 25% basis, both with and without the 40 hours weekly, 25 positions in the following:

AVIATION PROJECT ENGINEER (1)
Engineering degree or equivalent engineering the ship, aircraft and land 3 years' experience; 100% flying experience.

STRUCTURAL MECHANIC (1)
4 years' aircraft, plus engineering college degree or suitable equivalent.

LAYOUT ENGINEER (1)
4 years' drafting experience, plus 2 years' engineering college or suitable equivalent.

SHIPS ASSISTANT (1)
Engineering degree, plus 2 years' ship experience.

CREWERS (2)
3 years' engineering college or equivalent; 1 year's aircraft experience; 100% flying experience. Able to get along with fellow workers; accurate and steady.

CREW ENGINEER (2)
High school education with one year drafting or engineering experience.

IF YOU ARE AVAILABLE

under the ratings of the War Department Commission and one of the many other types of these positions, commensurate of class within.

C. J. Liddy

IBO AIRCRAFT CORPORATION
Dunbar Building, Washington, New York



"DAT" LOFT AT LOCKHEED PLANT:

This is the DAT (detail assembly template) loft at the company's Burbank plant. Here, on specially prepared metal plates, workers lie on rolling carts to make full size drawings of the lines of new planes.

of research, is now being fielded for installation on several military planes and is expected to have post-war uses on large commercial planes.

1200 Major Changes Made in Commando

More than 1,200 major changes have been made in construction of the Curtiss C-46 Commando in the course of engineering the plane for war service and in designing changes for commercial use after the war. In all, some 4,000,000 engineering man-hours have been expended since its inception.

Despite the fact that the ship was primarily designed for commercial use, its transition as a war cargo plane has been such that hundreds of engineering changes are being made to re-transform it into a civilian commercial ship, incorporating the benefits of war experience and the changed requirements of airlines.

Power Plant — The primary change in the commercial version from the war version will be a change in the power plant from Pratt & Whitney R-2800 engines to Wright Cyclone 18's with three-blade propellers, affording a considerable increase in power for the commercial ship.

Ground crews will find cargo handling simplified through incorporation of the two compartments under the passenger section. The

rear compartment is easily reached from the ground, while the forward compartment can be loaded or unloaded from a platform about the height of a normal hand truck.

Doors — While only two doors for the post-war Commando have been announced publicly, others are in negotiation, with the sales effort of the Curtiss organization being directed in the medium and short range field.

It is probable that the plane will be built at the St. Louis factory at Lambert Field—W O K.

Wright Cell to Test 4000 hp. Engines

First of 16 new test cells structurally capable of accommodating engines up to 4,000 hp has been opened at Wright Aircraft's Wood-Ridge, N. J., plant, to be used for the present in testing of 3,000 hp Cyclone 18's being built for Boeing's B-29 Superfortresses.

Last of the new cells will be ready for use by the middle of December and while the tests were designed to handle test operations of engines with almost twice the present horsepower mark, company officials said the equipment for some time to come will be concerned with existing models of Wright engines.

Fire Protection — All cells are equipped with automatic fire fighting systems which can instantly flood the chamber with carbon

dioxide gas. To speed the job of mounting engines, jacksaws have been installed giving direct access in each cell to the engine from the second floor control room and the floor of the test cell itself. Sections of these walls are retractable and are drawn away from the engine while it is running.

\$70,000 for Ideas

Stipendium awards to Canadian aircraft workers now total more than \$70,000, with an estimated saving of \$501,000 in aircraft construction costs as a result of the suggestions.

One of the latest awards went to an employee of Northway Ltd., of Montreal, who suggested pre-assembly of conduits, junction boxes and wiring for the Noorduyn UC-64 Nomad transport as a band instead of inside the wing of the plane. The work is then installed as a unit and time is saved not alone in assembly of the section but in the time the plane would have to be stopped at that stage on the production line.

New Invader Props

Douglas' new A-26 Invader is the 14th type of United States warplane to use Hamilton Standard propellers during this war, the sixth in the Army's attack bomber class.

Propellers are three-bladed Hydromatic, 13 ft. 7 inches in diameter, geared to one-half the RPM of the 2,000 horsepower Pratt & Whitney engines. The blades incorporate the Clark-Y airfoil. The propellers are manufactured by Nash-Kelvinator and Remington Rand, both licensees of Hamilton Standard Division of United Aircraft.

Rangers for G-44's

The 25 Grumman G-44 Wolfenbugs to be built for the civilian market will be powered with Ranger engines declared surplus to Army needs. It has been learned. Industry sources were unable to say whether the Rangers would be engines that had been used or taken from excess stocks of spares. Whether they are, however, they will be returned to the Ford child factory to be reconditioned or checked.

Grumman thus far is the only aircraft company given permission to turn out planes for the civilian market.

TRANSPORT

Standard & Poor's Analysis Sees "Big 4" Dominating Airline Field

Smaller units, such as PCA, National, Northwest and North-east also are "designed for an expanded role," investment advisory organization says.

The "Big Four" will continue to dominate the domestic field, according to a current analysis prepared by Standard & Poor's, investment advisory organization. These carriers are identified as American, United, Eastern and Pan Am. The service also believes smaller units such as PCA, National, Northwest and Northeast are "definitely destined for an expanded role."

Based on its analysis, Standard & Poor's raised the market ratings on American, Eastern and PCA to "buy" from "above average." At the same time, the rating on Braniff was lowered from "average" to "below average" since the "sharp up-go" in the stock has not been matched by the relative improvement in the company's outlook. Other classifications show for "above average," Chicago & Southern, Northwest, TWA, United and Western. Joining Braniff is "below average" is National. An investment opinion on Pan American is sidestepped completely as the "factors governing the future of air transport, particularly in the international field are too confused to be assessed intelligently at present."

"Speculative" — The service contends airline stocks are highly speculative and are selling around all-time peaks. The industry is believed beyond the stage where the purchase of shares could be characterized as a step in the stock market is directed, however, toward the recommended status as "anything but a distinctly long-term speculation."

A strong factor in the survey's opinion is the absence of a long-term expansion problem for the airlines. The volume of air travel is "certain to be very large—swelled by the circumstance that it will take some time before normal use of highways is restored." The industry is thus the air carriers will not be threatened by the competitive

influence of auto and bus travel for some time. This represents a novel approach to most observers, as this type of traffic has had little effect on air transportation. Moreover, despite existing highway conditions, bus lines are operating at peak levels and will probably continue to do so over the near future.

Capacities — As more buses are made available, the motor carriers will have increased capacity at their disposal. It can thus be seen that air travel is little concerned with any actual inroads from motor vehicles. The fact further remains that from the standpoint of speed, time and comfort the air carriers have little to fear from highway services.

While it is correct to assume that no serious reconversion problem faces the airlines, there is a

strong tendency to overlook the major post-war-stimulated conditions have played in mounting earnings experienced by the group.

In other words, during this post-war period, when reconversion is the big bogey in many minds, the prevalence of more "normal" operating conditions may be the environment of certain traffic new extent only because of the war.

1946 Not Far Above 1943 — Full 1944 net income is placed well above that of 1943 by Standard & Poor's. Recognition is accorded the effect of the return of more planes to commercial service. With high load factors continuing and operating costs remaining relatively low, increased earnings are but a natural result. Also, operations look good from a comparative viewpoint. Passenger and cargo rates were relatively low in 1943. This made for a condition where such rates were lower in the first half of 1944 than a year ago. Since the current month of July, however, comparison can be made on a year and equitable basis.

In looking ahead, the survey recognizes that the lead factor is bound to drop sharply from that of wartime, but airline operations should be far more profitable than before the war, even if there is no relaxation of tax subsidies. Little is said about the tremendous increases in costs which are found



BRITISH TRANSPORT IS BOMBER DEVELOPMENT:

This converted Vickers-Armstrong Warwick transport is a British ship developed from the Wellington bomber design. It is used for military transport and air-mail routes with dropping facilities. Carrying passengers and freight, it operates in many theaters for the RAF, and may be a forerunner of post-war transport. Data are unavailable on load, passengers or crew or transport, but in rescue work the plane carries a crew of seven and eight 365 machine guns. Built by Vickers, it has a 34-foot 4½-inch wing span, 71 feet 6 inches length, 18 feet 6 inches height, 1,000 square feet wing area and 15,000 pounds weight. Power is from Pratt & Whitney double Wasp engines. Picture is from the Aeroplane, British aviation journal.

Airlines' Certainty of Profits Prevailing Note at Coast Hearings

Major companies reveal for first time in CAB session at San Francisco their expectation of operating four-engine equipment on short-haul runs on passenger and cargo feeder lines.

Certainty of potential profits in passenger and cargo feeder enterprises dominated the CAB hearings in San Francisco last week.

Major airlines told for the first time their expectation of operating four-engine equipment on short-haul runs in the near future and revealed their readiness to plunge into the operation of feeder lines.

Profits Expected—Feeder companies testified their willingness to accept first and second year deficits on the strength of future profit expectations.

The hearing's three airlines applicants for 30 new western routes qualified by the thoroughness of their estimates of markets, of operating costs and revenues, their hope of winning from the CAB deal rather than experimental certification of their requests.

They came into the hearing with

close to a quarter-million dollars invested in the preparation of their cases.

At the midway point of testimony scheduled to run through two weeks they had indicated substantially the application of three basic route patterns: the "school-bus" system of assigning linking routes to serve intermediate and off-airport communities; the "loop" route originating in a major trade area and the "starfish" system of routes radiating from a major trade area.

Divided—Equally divided were applicants planning to use the in-flight cargo pickup service used by All American Aviation and those contemplating all-points landings.

But there was unanimity in evidence that whatever grade will be given by the CAB service will be given with aircraft all-suited to the demands of operating efficiency.

That no time "feeder type" airplane now exists or will be available for operation within the next eighteen months was emphasized by Lockheed Entry—The only key-fall sign, spokeswoman, was the testimony of Leland Hayward, president of Southwest Airways, seeking 21 coast-wide feeder routes, that Lockheed Aircraft Corporation has under construction a passenger and pickup feeder plane which should be test-flown by the middle of 1949 and be in production early in 1949.

Investment confidence in the

180 More Planes

Approximately 180 planes have been added to the transport fleet since the Bureau of Property Record, all of types previously reported and none in the active classification.

Seventy of the added planes are Cessna AT-52s, 38 are Curtiss AT-4s, 25 Bonanza AT-18s, 25 Lockheed Hudson AT-18s, seven Douglas RB-18s, and 10 Vought Ventura RB-34s.

proposed feeder enterprises was apparent in the declaration of applicants that they have assurance of book loans and equipment loans for the purchase of airplanes and ground equipment they will need.

Although subjected to constant challenges by attorneys of competing companies on points of accuracy, results of applicant research into passenger and cargo potentials—a variety of formulas were used to reach conclusions based upon studies of population, trade areas, business and wealth, travel habits and surface transportation—were indications of the approval of CAB Researcher Francis W. Boyer and P. Merritt Rabin.

Both believe that the West Coast applications, and their method of preparation and presentation, will prove influential in establishing the pattern of future domestic feeder applications.

Research Costs—The few direct offerings of evidence on the cost of research and preparation of applications undoubtedly will be discouraging to huckstered proposals for future routes.

Southwest Airways testified an application cost of \$30,000. Nevada Pacific Airlines spent \$25,000. Ryan School of Aeronautics invested

\$50,000 in its bid for six routes serving 123 cargo pickup stations. Strongly, United Air Lines and Western Air Lines were the only domestic trunk route carriers to recognize to the point of seeking their own producer feeder routes the business challenge of the feeder airline applicants.

All major trunk carriers challenged constantly and persistently the accuracy of feeder airline evidence, but American's prime lawsuit was pressing its application for certification on the San Francisco-Los Angeles route already served by UAL, TWA and WAA, while TWA principally sought two new stops at San Bernardino and Palm Springs.

Unexpressed but present was the belief of some feeder authorities that by frequency of schedules and short-haul routes they intended to the coexistence of other served a carefully operated feeder company might "starve out" the operations of trunk carriers extended to intermediate stations.

In Southwest's brief was this expression of confidence in feeder airline planning:

"It would seem inevitable that any operating feeder airline eventually is bound to extend its services to all the major Pacific coast centers."

Feeder Men Optimistic—Although all feeder applicants voiced optimism over long-range investment returns, the hearing brought into sharp contrast individual profit experiences.

Ryan anticipated a first year net and expense revenue of \$49,948.88 and a gross net of \$59,270 after taxes from the flying of 1,355,568 revenue miles, and declared readiness to pay the president of the operating company a salary of \$24,900 a year.

Nevada Pacific, with a \$8,000 a year president, anticipated a net return of \$267,371 from the first year's 3,545,654 revenue miles.

Others, offering only passenger and expense revenue showings, declared dependency upon mail allocations at varying rates to break even or produce a reasonable operating profit.

Established Carrier's Bid—Trunk line competitors reflect the business hopes of the feeder applicants for the immediate post-war period was evidenced on the witness stand by Charles L. Galla, TWA's assistant to the executive vice-president. "It may well be that we will be operating local service with four-engine aircraft," he stated the



Exhibit Presented at West Coast Hearings: CAB Examiner F. Merritt Rabin receives a copy of an exhibit from Glen B. Earbourn, manager of Los Angeles Chapter of Cooperative Transportation Department, at the hearings on the West Coast case which began Nov. 3 in San Francisco. At left is CAB's Assistant Chief Examiner Francis W. Boyer, who is presiding over the proceedings. Earbourn, who pressed Los Angeles request for widespread air services in California, also is vice-president of the National Aeronautic Association.

Coordination as the type of aircraft he had in mind. Monoplane development of feeder airline service in major trade areas was championed by James G. Roy, vice-president of Southwest Airways. Under cross examination he said



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"Monopoly is not good in any field unless highly controlled" and then declared his belief that there is "no room for two feeder companies in the operation of one trade area." Asked directly if he believed there will be room for other feeder operators in the five trade areas in which Southwest seeks certificates Ray said "No."

► **Southwest's Ambitions**—Asked if his company's philosophy of extending operations from one trade area into another indicated that Southwest "might go right on over the United States," Ray replied "Frankly, we'd like to. If given the franchise we certainly would see what we could do with them."

An indication of Southwest's ambitious planning was seen in the company's estimate of first year operating costs of \$5,500,135 in 1981 of 12,133,325 revenue million and an expected return of \$4,775,066 from passenger and cargo business. Unestimated mail pay was expected to balance the deficit and provide fair profit. Ray conceded that if the Lockheed passenger planes his company expects to buy are not ready at the required commencement of operations Southwest will be willing to accept certification for cargo and mail pickup.

HANDLEY PAGE POST-WAR TRANSPORT

The artist's drawing above, which has been similarly featured in recent advertisements of Handley Page, British aircraft manufacturer, approximates in many details a description of the Handley Page Hermes commercial transport contained in a press report of the Society of British Aircraft Constructors, Ltd. According to the Society, construction of the prototype already is far along, and the plane may be flown within a few months.

U.S. Highway Deaths Wreak

Handley Page Works On 35-Ton Airliner

The latest British entry in the race for post-war commercial airline equipment was announced last week by the Society of British Aircraft Constructors, Ltd., who disclosed that Handley Page was working on the prototype of a 38- to 50-passenger airliner known as the Hermes. The first Hermes, based in part on the successful Handley Page Halifax heavy bomber, will probably begin flight tests in a few months.

The Hercules is a conventional low wing all metal stressed skin four engine monoplane. The ship will be powered by four 14-cylinder Bristol Hercules engines developing a maximum of 6,800 hp. The Hercules is a radial air-cooled engine fitted with sleeve-type valves. Propellers will be de Havilland full feathering hydrodynamic

► **34 Seats**—Present cabin designs mirror both passenger and cargo versions of the plane. In the former, a flexible internal cabin arrangement provides 34 seats for long haul daytime operation. Another plan calls for 32 seats, convertible to 16 berths for night travel. For short hauls, a cabin arrangement seating 50 passengers

is planned. A fourth de luxe Pall-mara type version features a "club saloon" for 20 passengers.

Other data include:
Range—2,000 miles.
Overall weight—70,000 lbs.
Freight capacity—10,000 pounds.
Pressurized cabin on passenger types only.
Maximum speed 340 mph.
Weak mixture maximum cruising speed 260 mph.

Long distance cruising speed
340 mph.
Cruising altitude 33,000 feet.
Cabin pressurized and heated.
De-icing equipment on wings,
propellers, engines and tail area.
Cargo, mail and baggage space
—540 cu. ft.

Other British manufacturers also
are at work on commercial trans-
port types. The Bristol Aeroplane
Co. has under construction a plane
known as yet only as Model 167.

► **Other Types**—The A. V. Roe Co., builders of the Lancaster heavy bomber and the Avro York transport, have under construction two other commercial types, the 33-ton Tudor airliner and another 66-ton ship as yet unnamed. The latter is reported to be a 125-passenger plane 138 feet long with a 126-foot wingspread, designed to cruise at 250 mph.

Other British manufacturers working on transport types are Vickers Armstrong, whose Warwick twin-engined ship is in use by the Royal Air Force, and the Short Co.



MOBILE FEEDER AIRLINE BUS STATION:

To slash the time needed here, line planes must remain on the ground to discharge and take on passengers, Oliver L. Purser, president of Purser Air Transport, Inc., East St. Louis, Ill., has devised the combination bus/train show in its runway time saver. The vehicle diverts a four-wheel motorized office and several airport installations by combining the functions of taxiway, delivery track, ticket sales counter, radio control tower, refreshment stand and rest room. In practice, the bus would drive alongside planes at the airport runways, eliminating taxi time. Passengers would board the baggage (30-40 passengers) and the bus driver would be in charge of airport mail handling, cargo, repair vans, ticket salesmen, back counter clerk and even express handler and dispatcher.

NWA Negotiates For DC-4 Purchases

Company engineers also studying DC-8's and Constellation's in post-war expansion plans, Perceval Hunter tells stockholders.

In anticipation of post-war expansion, both domestic and international, Northwest Airlines is negotiating with Douglas Aircraft Co. for possible purchase of an unspecified number of DC-4s currently owned by the military. Northwest's President, Coud Hanson, told company stockholders at a recent St. Paul, Minn., meeting that NWA engineers also are considering the DC-6 and Constellation.

Northwest is now operating 13 DC-3s, the equivalent of its pre-war fleet. Should the Civil Aeronautics Board approve the extension of the system from Minne-

agely-80. Paul to New York, an company officials expect, the DC-3 fleet probably would not be able to handle the operation without considerable curtailment of services now offered in the Northwest. With the DC-4, the most likely post-war transport for first delivery, perhaps in 1945, Northwest may possibly complete a contract for several ships of this type.

Capital Adequate—Northwest's present capital is considered adequate for opening the expected New York extension and for the

regulation of some four-engined
planes

The line's net profit for the fiscal year ended June 30 was \$937,888 compared with \$990,892 for the 1942-43 period. Operating expenses rose 53 percent in the past year, chiefly because of a 43 percent increase in plane fuel costs. The company operated during this period with a revenue passenger load factor of 85.17 percent and a performance factor of 86.73 percent.

Joint Research With Navy—Hanger answered at the stockholder's meeting that Northwest was participating with the U. S. Navy in a program of experimentation for elimination of precipitation static, conducted in a half-million dollar hanger at Weid-Charlebois Airport, Minneapolis. Military aircraft with static control equipment are now under construction according to Hanger.

At the meeting, Northwest's stockholders re-elected the Board of Directors, which in turn voted to retain all the present company officers.

Changes in plans for Boston's Logan Airport, proposed trans-Atlantic terminal, have reduced from four to three the number of sets of parallel runways which will be built. The runways will be 300 feet apart instead of 1000 as originally planned, in order to improve instrument landing characteristics of the field.

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I HARRIS A-N standard shock mounts are made in two types: steel and dural (non-magnetic) and conform to the joint Army-Navy specifications AN-4-10 and drawing AN-6005.

They have been approved by AAF (Wright Field) and are used extensively by the Army, Navy and aircraft manufacturers.

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Most Aviation Leaders Remain in Congress

THE DECISIVE ELECTION VICTORIES for Democrats in both House and Senate last week leave the leadership of Congress and the important committees dealing with aviation virtually in the same hands.

With Sen. Pat McCarran and Rep. Jennings Randolph re-elected, two of aviation's outstanding figures appeared assured of their seats in the next Congress.

Rep. Clare Luce (Rep. Conn.), who chose aviation for her maiden speech in the House came out a victor, although trailing in early returns. She is expected to figure in the aviation picture during the coming session. Chief Justice Warren's appointment from Connecticut, Rep. William J. Miller (R.), however was a loser. Miller, a member of the Woodrum Committee on Postwar Military Policy, has taken an active part in aviation matters in the present Congress and the Nicholas Foundation to establish a standing committee on aviation.

Sen. Max C. Baughman, chairman of the aviation subcommittee of the Senate committee investigating the war program (Truman Committee) and a member of the Senate Commerce Committee handling postwar aviation policy, was elected Governor of Washington. Rep. Warren G. Magnuson, a high ranking member of the House Naval Affairs Committee who has been active in aviation matters in Congress, was elected to the Senate from the same state.

The new election casualty in the election was Rep. Melvin Maas (R. Miss.), ranking minority member of the House Naval Affairs Committee, and a nationally known marine air officer. Maas' defeat will leave Rep. James Mott (R. Ore.) up to first place on the Republican side of the affair, with Rep. J. Sterling Cole (R. N. Y.), in second place.

Rep. Eugene Worley (D. Tex.), chairman of the subcommittee on overseas trade of the House Postwar Economic Policy Committee, expected to play an important part in the House in the formulation of postwar aviation policy, was re-elected, as were Chairman Schuyler Otto Bland (D. Va.) of the House Merchant Marine and Fisheries Committee and Rep. Richard Welch (R. Calif.), highest ranking Republican on the committee—two of the most aggressive champions of the shipyard point of view on overseas aviation.

Two old-timers, Chairman Carl Vinson (D. Ga.) of the House Naval Affairs Committee and Chairman Clifton Woodrum of the House Postwar Military Policy Committee, will continue to head up their groups, expected to make decisions vital to aviation in the next Congress. Rep. Lyndon Johnson (D. Tex.), chairman of the aviation subcommittee of naval affairs will move up to third place on the majority side of the committee as a result of Magnuson's candidacy for the Senate. Rep. Patrick Drewry (D. Va.) will continue to make decisions vital to aviation in the next Congress.

The top stratum of the majority side of House Interstate and Foreign Commerce Committee will be the same next year, with Chairman Clarence F. Lea (D. Calif.), Rep. Robert Cramer (D. Ohio),

Rep. Alfred Bulwinkle (D. N. C.), and Rep. Virgil Chapman (D. Ky.) and Rep. Lyle Boren (D. Okla.), re-elected. The fifth ranking majority member of the committee, Rep. Martin J. Kennedy (D. N. Y.), a signer of the minority report against the Lea Bill, was defeated in the primaries. Other Democrats on the committee re-elected were Lindsay Blackworth of Texas, Thomas D'Alessandro, Jr., of Maryland, Percy Priest of Tennessee, Oren Harris of Arkansas, and Richard Markan of Arizona.

Reps. Charles Wolverton, B. Carroll Reece and Phil Helms, Republican leaders on interstate and foreign commerce and sponsors of the Lea Bill, were all re-elected. Rep. Clarence J. Brown (Ohio), and Rep. Charles Halleck (Indiana), two other Republicans on the committee, were also successful.

Rep. Carl Ranshaw (R. Calif.), a member of Interstate and Foreign Commerce, who pushed the Nicholas Resolution for a standing aviation committee but later gave his support to the Lea Bill, was re-elected.

Although Chairman Andrew May (D.) of the House Military Affairs Committee was leading in his Kentucky race for re-election late last week, his margin was so small that question was being raised on the possibility of the committee's chairmanship going to Rep. Ewing Thomson (D. Tex.), second in line, in the next Congress. The defeat of Rep. John M. Costello (D. Cal.) in the primary and retirement of Rep. Matthew Morris (D. N. Y.), because of obstructing in New York, will move Rep. Overton Brooks (D. La.) up to third ranking place on the majority side of military affairs and make the position of chairman of the aviation subcommittee available to him. Fourth ranking member of the committee next year, Rep. John Sparkman (D. Ala.), will fall far to the aviation subcommittee chairmanship if it is passed over by Brooks.

On the Senate side of Capitol Hill, the only two members of the Senate Commerce Committee running for re-election in the final race, Sen. Guy C. Wood (R. Ore.) and Sen. John H. Overton (D. La.), were victorious, with Overton moving up to second place on the majority side of the committee as a result of the defeat in the primaries of Sen. Helms Caraway of Arizona and Bennett C. Clark of Missouri.

Chairmanship of the Senate Military Affairs Committee will go next year to Utah's Elbert Thomas, a successful candidate for re-election, as a result of the retirement of Sen. Robert R. Reynolds (D. W. Va.) who did not run this year. Sherman Hays (D. Calif.), also of Senate Military Affairs, was re-elected.

On Senate Naval Affairs Committee, Sen. Richard Russell of Georgia and Sen. Harry Flood Byrd of Virginia will step up to third and fourth ranking position, respectively, because of the defeat of Ellison S. Smith of South Carolina in the primary and the resignation of Homer Bone (D. Wash.) from the Senate. Sen. Millard Tydings (D. Md.), who ranks next to Chairman David I. Walsh (D. Mass.) on the committee was easily

ROBERT H. WOOD

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A-C WELDER FOR LIGHT GAUGE WORK

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It meets the four major requirements for aircraft welding services:

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The new Westinghouse Type WC-AC Welder eliminates the need for "dapping" welders installed for other types of service with their slower and less flexible performance. Superpowered high frequency makes the arc practical on light materials at low currents and boosts welding output. Further, the price of the Type WC-AC welder is comparable with that of regular d-c welders.

For more information on the new Westinghouse High-Frequency Stabilized A-C Welder, call your nearest Westinghouse office, or write today to Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa.

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3. Double range current adjustment for welding of special alloys—results in extremely fine current adjustments from 10 to 70 amperes.
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5. Built-in-once-thrusts-in holder (included in accessories) provides pilot control of the high-frequency stabilizer.



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A-C WELDERS



Service Men for SUPERFORTS

THREE of these G-E field-service men have just come back from a B-29 base somewhere in the Orient. For several months they serviced B-29's, "sweating it out" at the base as the missions were run, listening to the Jap radio reports of the raids, and then methodically checking turbo-superchargers, pressurized cabins, and gunfire systems when the planes returned. Now, enthusiastic over the potentialities of these great ships, they are back at G.E. checking flight performance records against laboratory tests and lecturing to student engineering classes.

The B-29 program has completely occupied the time of thousands of G-E people for well over a year. For the Superfortress, thousands of special motors have been built, new equipment has been developed—much of it based upon reports from G-E engineers like these who were, and are, at bases throughout the world. G-E men go where they're needed. They are giving outstanding service to members of the Armed Forces on every battlefield. *General Electric Company, Schenectady 5, N. Y.*



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